

**Appendix M**  
**Response to Comments**

**Chollas Creek Metals Total Maximum Daily Loads**

**California Regional Water Quality Control Board, San Diego Region**

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## **LIST OF PERSONS SUBMITTING COMMENTS**

- Brake Pad Partnership
- California Department of Transportation
- City of San Diego
- Department of the Navy
- Environmental Health Coalition
- Industrial Environmental Association
- Sierra Club
- United States Environmental Protection Agency
- United States Fish and Wildlife Service

## 1. INTRODUCTION

This report provides responses to public comments timely received on the Total Maximum Daily Loads for Copper, Lead, and Zinc in Chollas Creek. Draft TMDL documents distributed for public review and comment included the Technical Report, Resolution No. R9-2005-0111, and the Basin Plan Amendment. The draft documents were made available to the public for formal review and comment on March 28, 2005, through the website of the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) and at the San Diego Water Board office. The public comment period closed on May 25, 2005, and consisted of a 58-day comment period.

The San Diego Water Board received over 80 comments in testimony, letters, and emails from 9 interested persons on the draft Technical Report. The letters were not reproduced in this document. Individual comments were excerpted from the letters and testimony, and organized by commentator. The comments are numbered sequentially in this report. Individual commentators are identified in the “List of Persons Submitting Comments” on page iii of this report.

Due to the large amount of discussion pertaining to the Compliance Schedule, section 2 of this document is dedicated to that topic. Additional information and changes to the Technical Report requested by the Board Members are discussed in section 3. Changes resulting from internal review of the Technical Report are discussed in section 4. Following section 4 are the responses to the comments of the interested persons.

## 2. COMPLIANCE SCHEDULE

The compliance schedule was one of the most controversial parts of the Chollas Creek metals TMDLs. Several persons testified and/or submitted comments on the adequacy or inadequacy of the schedule. Because of the importance and degree of interest in the compliance schedule, comments on the compliance schedule are grouped in this section.

**Comment No. 1:** Pg 7: “By the end of the seventh year after the OAL approval of this TMDL, the waste load allocations shall be met.” Please explain why 7 years was chosen when many of these sources are outside of our control?

**Submitted by:** City of San Diego

**Response:** A 7-year compliance schedule was chosen to ensure that pollutant load reductions are achieved in Chollas Creek in a short time frame, and to ensure that ongoing discharges of metals from Chollas Creek do not jeopardize the success of the future sediment cleanup at the nearby shipyards in San Diego Bay. The 7-year compliance schedule was based on the assumption that WDRs implementing the TMDL would be issued within 2 years of TMDL adoption, and that 5 years was a reasonable time frame to implement BMPs to achieve WLAs following TMDL adoption. The 5

years to implement BMPs was derived from the CTR compliance schedule provisions [40 CFR 131.38(e)] which state that:

- (3) Where an existing discharger reasonably believes that it will be infeasible to promptly comply with a new or more restrictive WQBEL based on the water quality criteria set forth in this section, the discharger may request approval from the permit issuing authority for a schedule of compliance.
- (6) In no event shall the permit issuing authority approve a schedule of compliance for a point source discharge which exceeds five years from the date of permit issuance, reissuance, or modification, whichever is sooner. Where shorter schedules of compliance are prescribed or schedules of compliance are prohibited by law, those provisions shall govern.

The proposed 7-year compliance schedule did not take into account the feasibility of planning, financing, and constructing structural BMPs within that time period.

A related issue is that the CTR compliance schedule provisions cited above expired on May 18, 2005. With the expiration of the CTR provisions, the San Diego Water Board does not have a basis to incorporate a CTR compliance schedule in WDRs that implement federal NPDES regulations,<sup>1</sup> including WDRs for MS4 discharges. Although this TMDL Basin Plan amendment includes a compliance schedule, it cannot be incorporated into NPDES WDRs before amending the Basin Plan to incorporate a compliance schedule policy. Without such an amendment to the Basin Plan, the San Diego Water Board would need to use an enforcement action such as a Time Schedule Order or Cease and Desist Order to implement the TMDL compliance schedule. The San Diego Water Board is working on a Compliance Schedule Policy Basin Plan amendment, which it hopes to adopt before the end of the calendar year.

### **Comments No. 2 through 9**

Comments No. 2 through 9 address the appropriate length of the compliance schedule, and provide detailed information on the time needed by the dischargers to implement a BMP program for metals in Chollas Creek. A single response to Comments No. 2 through 9 was written to address these comments collectively. The response follows Comment No. 9.

**Comment No. 2:** At the hearing, Board members and the Executive Officer provided direction regarding the compliance schedule. Ms. Kraus and Ms. Ritschel requested more information regarding the basis for the Compliance Schedule. Mr. Wright and

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<sup>1</sup> Pursuant to Chapter 5.5 of the Porter-Cologne Act, to avoid the issuance by the USEPA of separate and duplicative NPDES permits for discharges in California that would be subject to the Clean Water Act, the State's WDRs for such discharges implement the federal NPDES regulations, and entail enforcement provisions that reflect the penalties imposed by the Clean Water Act for violation of NPDES permits issued by the USEPA. Thus, the State's WDRs serve in lieu of federal NPDES permits.

Mr. Minan asked all parties to further substantiate the basis for their proposed Compliance Schedule. Mr. Robertus requested more milestones be included in the Compliance Schedule.

**Comment No. 3:** The compliance schedule presented in Table 11.2 of the staff report shows full compliance in seven years. This schedule is unrealistic and unobtainable given there is currently no BMP technology available that will meet the water quality objectives. The schedule should be extended to allow more time. An appropriate time schedule may be 20 years, which would be similar to the LA River metals draft TMDL that allows 22 years to achieve compliance.

**Submitted by:** CalTrans

**Comment No. 4:** The compliance schedule presented in Table 11.2 of the staff report requires full compliance in seven years. This schedule is unobtainable given that there is currently no BMP technology available that will completely meet the water quality objectives. The objectives as defined in the current staff report are moving targets based on formulas to estimate concentrations that relate the acute and chronic condition levels to the variable hardness of water. While the Department can partially meet this requirement with currently available technology, additional time is necessary to develop and test technology to achieve the entire range- of water quality objectives. An appropriate compliance schedule may be between 15 to 20 years. Similar Metals TMDL for the LA River and Ballona Creek allows 22 years and 15 years, respectively to achieve compliance.

Attached is a proposed schedule for the Department to meet the broad water quality targets for copper, lead and zinc. The proposed schedule presents three phases - Investigation, Pilot BMP Research, and Implementation. The first phase is an investigation phase to allow the Department to work with other stakeholders to develop an approach that would have the largest impact without duplication of funds and efforts. The Department proposes to work cooperatively with the stakeholders in public education, source control BMPs and studies to better understand the source of metals loadings, the transport of the loads, the effect of aerial deposition, and the relationship between the total recoverable and dissolved metals in stormwater and within the bay. The Department along with stakeholders will work cooperatively with Air Quality Management District (AQMD), Air Resources Board (ARB) and Environmental Protection Agency (EPA) on programs to address atmospheric deposition within the watershed.

The second phase will consist of piloting new technology within the watershed to find a technically feasible BMP that will reduce pollutant concentrations to the variable levels required in the TMDL. The Department proposes two parts to this phase to build upon and refine initial BMP design. Consistent with the Department's BMP evaluation protocol, a minimum of three years of pilot BMP monitoring will be conducted to obtain sufficient information to evaluate the BMP to ensure effective reduction of metals to concentration levels required in the TMDL.

After successful piloting of a technically feasible BMP, the third phase will consist of a three-part implementation plan. Each phase will consist of siting, design, and construction of BMPs to meet the Department's compliance needs. Implementation may begin with installation of BMPs within "hot spot" priority locations within the watershed.

**Submitted by:** CalTrans

**Comment No. 5:** The proposed seven (7) year time period to achieve the targeted concentration limits is simply unrealistic. The proposed 50% reduction in three years is equally unrealistic. The compliance schedule stipulates decreasing limits down to the targeted concentration level at the end of the seven (7) years. To achieve reductions will take time in order to coordinate with other stakeholders, review the available best management practices (BMPs), find potential BMPs locations, go through the required California Environmental Quality Act review process, project design and project construction. The City estimates that it would need at least six (6) years to coordinate with the communities in order to begin implementation of a water quality program of this magnitude.

**Submitted by:** City of San Diego

**Comment No. 6:** Based upon the above information, the City of San Diego proposes a phased approach to this issue. The first phase of the two years would consist of the City performing the sampling and technical alternatives review necessary to develop a plan for proposal to the RWQCB. The second phase of 16 years would consist of implementing the proposed plan. A timeline of eighteen years is reasonable given the complexity of the possible solutions and provides adequate time to plan, permit, design and construct a water quality capital improvement program for the Chollas Creek watershed. The challenge of reducing the concentration of dissolved metals in storm water is being recognized elsewhere in the State. For example, the Los Angeles Regional Water Quality Control Board is currently proposing a range of 13 to 18 years for their various metals TMDLs allowing for a variety of compliance approaches to be pursued.

**Submitted by:** City of San Diego

**Comment No. 7:** The following schedule identifies the phases of a TMDL implementation timeline that incorporates an iterative approach during which the water quality improvements would occur over time. The schedule is only an estimate. The actual length of the schedule will be dependent on the results of each phase and action by our City Council to allocate funding for this purpose.

#### Phase 1- Forensic Monitoring & Research (Year 1-4)

More information about the dissolved metals sources within Chollas Creek watershed is needed to better target the sources, before there is a significant expenditure of public funds in order to meet the TMDL requirements through non-structural source control

efforts and structural treatment systems. The Technical Report makes broad assumptions about sources primarily from studies conducted elsewhere. The data from Phase 1 will serve to target areas of concern and guide the location of treatment facilities. A similar approach was used in the upper Newport Bay TMDL.

It would also be appropriate for the Regional Board to reconsider this TMDL in Year 5 to re-evaluate the waste load allocations and the implementation schedule based on the research findings similar to what the Los Angeles Regional Board is proposing in their metals TMDL.

#### Phase 2 - Pilot Studies (Year 5-10)

Treatment systems are expected to be a major part of TMDL compliance. None of the twelve (12) treatment technologies tested by CalTrans at 39 locations recently is considered capable of meeting the dissolved metals levels specified in the draft TMDL. Based on previous storm water treatment pilot studies, three years per site would be appropriate for a test period and it is reasonable to assume that two sequential study periods would be necessary. We are hopeful that modifications of an already approved treatment technologies may be effective to achieve the load reductions required by the Regional Board within the Chollas Creek watershed. The City and other dischargers would construct and test pilot treatment system(s) in order to evaluate effectiveness of the proposed treatment system(s) before they are recommended for installation within the watershed.

Note: Source control reduction efforts would begin in year 5 or sooner based on the results of the forensic monitoring and research.

#### Phase 3 - Treatment System(s) Recommendation & Funding Plan (Year 11)

At the conclusion of the pilot studies, the data would be evaluated and recommendations would be made, which will incorporate a cost-benefit analysis of the alternatives and prioritize the treatment facility sites. More than just dissolved metals would be considered in the BMP evaluation because of the practicality of addressing other pollutants impacting Chollas Creek as well. Responsibilities and cost-sharing for the design, construction, and operation of new treatment systems will need to be determined and formalized into an implementation agreement between the dischargers. A funding plan for this capital improvement program would also need to be developed.

#### Phase 4 -Design & Construction of Treatment Controls (Year 12 – Year 18)

Program implementation follows the planning, which would identify "what to do where". Other successful water quality programs, such as the \$10 million Mission Bay storm drain interceptor system, was designed and constructed in phases over two decades. Similarly, it is anticipated that the design and construction of facilities within the Chollas Creek watershed would be phased. To the extent possible, priority sites from a pollutant-reduction standpoint would be constructed before other sites in order to achieve load



reductions as soon as practical. Given that the current public right-of-ways were established without consideration for storm water treatment, the location of facilities within the existing public right-of-way is unlikely. It is probable that the property would need to be purchased for many of the project sites, which would add one to two years to the project timeline. Detailed timelines for each phase will be difficult, if not impossible to do at this time because what would be constructed has not been identified.

A typical capital improvement project has the following phases and approximate durations:

PHASE	DURATION
Preliminary Engineering	6 months
Environmental Clearance & Permitting	
Mitigated Negative Declaration	6-9 months
Environmental Impact Reports	14-24 months
Property Acquisition	12-24 months
Design	6-12 months
Contract bidding & award	6 months
Construction	6-18 months

It is important to note that pollutant reductions may be realized in the early years of TMDL implementation as a result of better understanding of the sources. For example, if air deposition is eliminated as a source, pollutant loads will be reduced significantly.

**Submitted By:** City of San Diego

**Comment No. 8:** We have stated in our oral testimony before the Regional Water Quality Control Board hearing on the subject matter on May 11, that we supported the five-year compliance schedule in the draft TMDL. We expressed our concern that the much longer time (20 years) for compliance proposed by the City of San Diego would not only hinder the cleanup of impaired sediments at the mouth of Chollas Creek but also with the tentative CAO R9-2005-0126 sediments cleanup in the shipyard leasehold that lies to the north of where Chollas Creek- empties into San Diego Bay. The Chollas Creek metals TMDLs for both the water (dissolved phase) and sediment must be selected to assure that the effluent from Chollas Creek does not re-contaminate the sediments in these two areas.

To address this issue, the Board granted two weeks (ending on May 25) to allow the parties concerned to establish a compliance schedule. At this meeting the parties discussed the staff recommendation that full compliance must be achieved within five years after the NPDES orders are modified to be consistent with the Waste Load Allocations of the TMDL. The Dischargers would be eligible for a one-time extension of up to five years if they can demonstrate sufficient progress towards achieving the WLAs and provide good reason as to why the five-year schedule is not attainable.

We concur with the staff recommendation provided that significant progress is defined and measurable. We recommend the following elements of the compliance schedule.

- Board to require the Dischargers to submit an action plan within 4 months for approval that include milestones and with dates by which to measure significant progress.
  - Milestone includes decision point to allow one-time extension of up to 5 years
  - Plan to include intermediate numeric targets with start date commencing once the plan has been approved.
  - Plan to include monitoring plan.
  - Plan to include structural and non-structural BMPs.
- Dischargers to pool resources to address such items as
  - Selection of BMP's
  - Allocation of the waste loads among the Dischargers
  - Cost sharing

We did a quick survey of other jurisdictions' efforts in addressing metals TMDL. Several informative sources in the San Francisco Bay area are listed in the attached references.

We believe that every effort should be made to achieve compliance within the 5-year period after the modified NPDES order is released.

**Submitted by:** Sierra Club

**Comment No. 9:** Regarding the compliance schedule we support the recommendations made to you in the most recent letter from Ed Kimura of the Sierra Club and staff recommendation of 5 year compliance cycle with a potential 5 year extension if “significant progress” is being made. We suggest that the Regional Board give an indication of what kinds of activities and results they would consider as significant progress. This could include but not be limited to site identification and commencement of CEQA processes, support of legislation or implementation of ordinances that would incentives or require changes to current polluting activities in the impacted area, reduction in totals of pollutant loadings due to efforts so far etc.

**Submitted by:** Environmental Health Coalition

#### **Response to Comments No. 2 through 9:**

In establishing the compliance schedule for achieving the Chollas Creek Metals WLAs, the San Diego Water Board must balance the need of the dischargers for a reasonable amount of time to implement an effective BMP program against the broad-based public interest in having water quality standards attained in Chollas Creek as soon as practicable. The public interest is best served when dischargers take all reasonable and immediately feasible actions to reduce pollutant discharges to impaired waters in the shortest possible time. A final issue is that the compliance schedule must not jeopardize the San Diego Bay sediment cleanup. In light of these considerations, the compliance

schedule in the Technical Report and Basin Plan Amendment has been revised to 10 years time to achieve WLAs, with intermediate milestones.

The MS4 owners have known about the metals pollution in Chollas Creek for some time, but as yet have done little to address the problem. Chollas Creek was placed on the CWA Section 303(d) List of Water Quality Limited Segments in 1996 for the pollutants addressed by these TMDLs. If the dischargers were not aware of the problem in 1996, it was brought to their attention in 1999 when the San Diego Water Board held its first public workshop on the Chollas Creek Metals TMDLs. In 1999, WDRs for CalTrans' MS4 discharges were issued by the State Water Board. Receiving Water Limitation No. C-1-1 of these WDRs (State Board Order No. 99-06-DWQ) prohibits the discharge of stormwater from a facility or activity that causes or contributes to the violation of water quality standards or water quality objectives. Urban runoff discharges from MS4s owned by the cities of San Diego, La Mesa and Lemon Grove (Cities), San Diego County (County), and the Port are subject to a similar prohibition (Receiving Water Limitation No. C.1) in Order No. 2001-01 prescribing WDRs for MS4 discharges in San Diego County.

Both the CalTrans and San Diego County MS4 WDRs place an additional obligation on the dischargers to submit a report to the San Diego Water Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards (Receiving Water Limitations C-1-3.a and C.2.a respectively). The WDRs require implementation of the BMPs described in the report. This obligation is triggered when either *the dischargers* or the San Diego Water Board determine that MS4 discharges are causing or contributing to an exceedance of an applicable standard, in this case copper, lead, and zinc WQOs and their associated beneficial uses. To date, neither CalTrans nor the municipal dischargers have formally made this determination or notified the San Diego Water Board as required by conditions of their WDRs.

In a meeting with stakeholders on May 18, 2005, the San Diego Water Board requested that the dischargers include information in their comment letters describing the actions they have taken to address metals discharges from MS4s into Chollas Creek. CalTrans' comment letter did not address this issue, nor did the City's comment letter. Other dischargers did not submit comment letters. According to Mr. Phil Hammer of the San Diego Water Board (personal communication, June 3, 2005), the copermitees are in compliance with the Jurisdictional Urban Runoff Management Program component of the MS4 WDRs, and are in the process of developing a BMP program for trash in the Chollas Creek watershed pursuant to Receiving Water Limitation C.2.a et seq. However, we have no information that any metals-specific BMPs have been planned or implemented in the Chollas Creek watershed.

The impact of dissolved metals discharges from Chollas Creek on the San Diego Bay sediment cleanup must be considered in establishing the compliance schedule. Stormwater plume and contaminant concentration studies from Chollas Creek stormwater discharges into San Diego Bay link metals and other contaminants from Chollas Creek

with the toxic hotspot at the mouth of Chollas Creek, and with the sediment contamination at the nearby shipyards in San Diego Bay. Metal load reductions to achieve WLAs in Chollas Creek must not lag substantially behind sediment cleanup actions, or else the sediment cleanup areas risk being recontaminated by runoff from Chollas Creek. Tentative Cleanup and Abatement Order No. R9-2005-0126 does not specify a date by which the sediment cleanup must be completed, however, a cleanup date will be specified by the San Diego Water Board at some point in the cleanup process. The cleanup date is expected to be substantially sooner than the eighteen years being requested by CalTrans and the City of San Diego to reduce excessive metal discharges to Chollas Creek.

The USEPA envisioned dischargers meeting water quality based effluent limitations based on CTR criteria within 5 years of adoption of the CTR (by May 18, 2005). This short time schedule shows that USEPA expected prompt action to meet CTR criteria. From a policy standpoint, time schedules should be as short as possible to provide incentive to dischargers to reduce pollutant loads expeditiously.

The City and CalTrans submitted information in their comments indicating that 18 to 18.5 years are needed to implement BMPs to achieve the WLAs in urban runoff. Considering the complexity associated with metals source control, and the time needed to plan, finance and build structural BMPs, meeting the WLAs within 7 years does not appear to be feasible. However, the dischargers should not be rewarded for their lack of action to restore water quality standards in Chollas Creek in light of the fact that their discharges cause or contribute to the violation of water quality standards. The dischargers should have initiated BMP planning and monitoring to address the Chollas Creek metals impairments following adoption of WDRs in 1999 (CalTrans) and 2001 (San Diego County MS4s) respectively.

Considering the time needed by the dischargers weighed against their obligation to take prompt action to address pollutant discharges to impaired water bodies, and the need to not lag behind the sediment cleanup, the Technical Report and Basin Plan Amendment have been revised to include the following compliance schedule and interim goals for achieving WLAs:

*TABLE 11.2 Compliance schedule and interim goals for achieving Wasteload Allocations*

<b>Compliance Year (year after OAL approval)</b>	<b>Allowable Exceedance of the WLAs (allowable percentage above)</b>		
	<b>Copper</b>	<b>Lead</b>	<b>Zinc</b>
1-3	100%	100%	100%
4	85%	85%	85%
7	50%	50%	50%
8	25%	25%	25%
9	10%	10%	10%
10	0%	0%	0%

Additionally, CalTrans, the Cities, County, and Port must comply with the requirements of the Receiving Water Limitations in their respective WDRs. Compliance with

Receiving Water Limitations C-1-3.a and C.2.a (Orders No. 99-06-DWQ and No. 2001-01 respectively) means that CalTrans, the Cities, County, and Port cannot continue delaying submission of BMP reports for metals reductions with their Stormwater Management Plan or Jurisdictional Urban Runoff Management Plan. Furthermore, the San Diego Water Board expects the Dischargers to submit required BMP reports for all MS4 pollutant discharges that cause or contribute to violations of water quality standards in any water quality limited segments within their jurisdictions. Similarly, the Navy should begin preparing and submit as soon as possible a ROWD for its MS4 discharges into Chollas Creek.

### **3. ADDITIONAL INFORMATION REQUESTED BY THE SAN DIEGO WATER BOARD AT THE MAY 11, 2005 PUBLIC HEARING**

**Comment No. 10:** Ms. Ritschel requested an update on the status of the San Diego Creek / Newport Bay TMDL Implementation Plan.

**Response:** The San Diego Creek / Newport Bay TMDL for Toxics was developed and adopted by the USEPA in 2002. Since that time, Santa Ana Water Board staff have been meeting with stakeholders and working on the Implementation Plan. Their TMDL is more complicated than the Chollas Creek TMDLs because it involves both a total and dissolved component and deals with many more constituents. In addition, it deals with the creek, the estuary and the bay. The USEPA anticipates adoption of the Implementation Plan sometime in 2006.

**Comment No. 11:** Mr. Johnson requested specific sampling and analysis details to be included in the Technical Report. He felt the response to the Peer Review Comment was insufficient.

**Response:** Section 12.5 has been revised to include specific monitoring and analysis requirements.

**Comment No. 12:** Mr. Johnson requested clarification on the basis of the 10 percent Margin of Safety.

**Response:** Clean Water Act Section 303(d)(1)(C) requires that TMDLs include a margin of safety to account for uncertainties associated with all the calculations required to establish a TMDL, including uncertainties associated with pollutant load determinations, modeling water quality, and monitoring water quality. The requirement can be satisfied by expressing the margin of safety as either unallocated assimilative capacity, (i.e., demonstrating that the pollutant loading would be less than the assimilative capacity of the waterbody), or demonstrating that conservative assumptions had been built into the calculations of the wasteload and load allocations.

There is not a recommended explicit Margin of Safety from either the USEPA or from State Guidance documents for TMDL development. However, there is some precedent in adopted TMDLs. The Chollas Creek Diazinon TMDL and the Shelter Island Yacht Basin TMDL for Copper both have an explicit MOS of 10 percent. The Rainbow Creek Nitrogen and Phosphorus TMDL has an explicit MOS of 5 percent.

While the absolute magnitude of the MOS is based on judgement, there are logical reasons to defend the necessity of an explicit MOS. This TMDL sets allocations that govern the dissolved metal phase only. Metals also occur in particulate phases that will be partially accounted for by this MOS. Furthermore, there may be synergistic effects among metals and with other pollutants that are not considered under CTR criteria. Again, the MOS will partially account for this potential increased toxicity. Finally, the analytical measurements of dissolved metals is not perfect, even with techniques recommended by the USEPA. Measurement errors will be partially covered by the inclusion of the MOS.

**Comment No. 13:** Mr. Anderson asked if more current sediment chemistry data are available.

**Response:** More current sediment data are not available. The San Diego Water Board is continuing to investigate this issue as part of the Mouth of Chollas Creek TMDL.

**Comment No. 14:** Mr. Johnson asked how potential non-compliance issues would be addressed.

**Response:** All WDRs implementing NPDES requirements in the Chollas Creek Watershed will be made consistent with the Wasteload Allocations and Compliance Schedule of these TMDLs. Once these WDRs are reissued, revised or issued, non-compliance issues will be handled like any other violation of the WDRs. Potential enforcement actions include a notice of violation (NOV), notices to comply (NTC), imposition of time schedules (TSO), issuance of cease and desist orders (CDOs) and cleanup and abatement orders (CAOs), administrative civil liability (ACL), and referral to the attorney general (AG) or district attorney (DA). The Regional Board generally implements enforcement through an escalating series of actions to: (1) assist cooperative dischargers in achieving compliance; (2) compel compliance for repeat violations and recalcitrant violators; and (3) provide a disincentive for noncompliance. If the WDRs require a BMP approach to solve the problem and sufficient progress is being made, no enforcement action may be necessary.

**Comment No. 15:** Ms. Ritschel asked staff to contact major stakeholders who had not commented by the hearing on May 11 and let them know that the comment period remained open for two weeks until May 25.

**Response:** On May 12, 2005, an email was sent to the Interested Parties mailing list informing them of the extension of the comment period. This list included

representatives of the major stakeholders who had not submitted comments to date. Since then, the United States Navy has submitted comments.

## **4. CHANGES RESULTING FROM INTERNAL REVIEW**

Internal San Diego Water Board review of the Technical Report resulted in changes documented below.

### **4.1. Additional applicable orders**

Table 5.1 of the Technical Report was revised to include a discussion of the following orders:

No. R9-2001-96

No. 2004-0009-DWQ

No. R9-2002-020

### **4.2. Revisions to the Basin Plan Amendment**

Several changes to the language and organization of the Basin Plan Amendment and Resolution No. R9-2005-0111 were made. Please see Appendix J for the changes.

### **4.3. Implementation Alternatives to Reissuing or Modifying Existing WDRs**

The Implementation Action Plan (section 11) of the Technical Report was modified to include alternatives to reissuing or modifying existing WDRs. The San Diego Water Board could issue new WDRs on a watershed or regional basis to implement the Chollas Creek metals TMDLs. Such new WDR orders could be subsequently modified as new TMDLs, such as those for indicator bacteria, are developed.

## **5. PUBLIC COMMENTS**

### **5.1. Comments from the Brake Pad Partnership**

**Comment No. 16:** The proposed amendment specifies that copper from automobile “[b]rake pad wear is likely to be a significant urban nonpoint source of copper in Chollas Creek” (p. 48). However, this analysis relies solely on the 1992 study prepared by Woodward-Clyde, which the Brake Pad Partnership has determined has some serious technical flaws. The Brake Pad Partnership is now conducting the technical studies needed to understand the role of copper from automobile brake pad wear debris on stormwater and surface water quality. These technical studies are supported by a State Water Resources Control Board Coastal Nonpoint Source Pollution Control Program Grant, pursuant to the Costa-Machado Water Act of 2000 (Proposition 13). The grant supports the Partnership’s voluntary effort to carry out a set of interlinked laboratory, environmental monitoring, and environmental modeling studies to understand the fate and transport of copper from automobile brake wear debris in the environment. The

Partnership initiated work on these studies in October 2003 and plans to complete them in December 2006. Enclosed for your information is a copy of a recent update on the Brake Pad Partnership that provides additional detail on our progress.

Although the Brake Pad Partnership's studies will not be fully complete until December 2006, I would like to bring your attention to two important new studies regarding total estimates of copper from brake pads in urban areas that have been completed or are near completion. The first study was conducted by the Clean Estuary Project (not the Brake Pad Partnership) in 2004. The Clean Estuary Project is a partnership of San Francisco Bay Area dischargers, the San Francisco Bay Area Regional Water Quality Control Board, and several other regional entities who have come together to facilitate efforts to improve water quality in San Francisco Bay by providing financial and staff support for technical analysis and stakeholder outreach activities. This report—*Copper Sources in Urban Runoff and Shoreline Activities*—provides a comprehensive summary of copper sources in urban runoff and estimates of their relative magnitudes. A copy of the report, along with other information about copper sources and control measures, is available on the Internet at: <http://www.tdcenvironmental.com/copperreduction.html>.

The second study—*Emissions from Brake Lining Wear in the San Francisco Bay Area*—is being conducted by the Brake Pad Partnership and is now available for technical review at [http://www.suscon.org/brakepad/pdfs/EstimatingCopperLoadingfromBrakeSources\\_draft\\_04-08-05.pdf](http://www.suscon.org/brakepad/pdfs/EstimatingCopperLoadingfromBrakeSources_draft_04-08-05.pdf). Upon completion of the review, this report is scheduled to be finalized on May 31, 2005. The results of this study will be used by the Brake Pad Partnership as one of the inputs to the air deposition, watershed, and bay modeling studies to understand how copper in brake pad wear debris may affect short- and long-term concentrations of copper in surface waters.

**Response:** The San Diego Water Board appreciates the information and look forward to the results of your study. We will review the new materials and amend our Source Analysis if necessary. Additionally, we will encourage local dischargers to join your efforts to work with industry to generate less polluting products.

**Comment No. 17:** The Chollas Creek TMDL also refers to the annual report of the Brake Pad Partnership that includes voluntarily reported information from the Brake Manufacturers Council on copper use in new vehicles by model year. I would like to clarify that these data are helpful in understanding trends in copper use in brake pads on new automobiles, however, they are not appropriate for use in and of themselves for mass loading calculations. The report is available at <http://www.suscon.org/brakepad/pdfs/CuUMP%20Final%20Report%2012-03-04.pdf> and contains a detailed explanation of the data and appropriate uses.

**Response:** The information and data mentioned were not used in mass load calculations. They were included as an informational item only.



## 5.2. Comments from the United States Environmental Protection Agency

**Comment No. 18:** Thank you for the opportunity to review the proposed Chollas Creek metals TMDLs and associated implementation plan. We fully support the proposed TMDLs and urge the Regional Board to adopt them. The proposed TMDLs meet all federal regulatory requirements and will be approvable when they are submitted to EPA. In particular, the proposal to express the TMDLs and allocations on a concentration basis is consistent with federal regulatory requirements. We also endorse the TMDL implementation plan, which identifies reasonable pollutant reduction approaches to implement the applicable water quality objectives.

**Response:** The San Diego Water Board appreciates the support of the USEPA.

**Comment No. 19:** We recommend clarification of the proposed monitoring plan to provide for collection of concurrent hardness data with unfiltered and dissolved metal samples to facilitate evaluation of compliance with the allocations. Furthermore, the analytical detection limits should be lowered to accurately assess ambient levels in comparison to dissolved metal objectives. EPA recommends the use of trace metal clean analytical and sampling methods for ambient monitoring purposes (see enclosed methods) [Methods 1638 & 1669].

**Response:** Section 12.5, Revised Implementation Monitoring Plan Elements, of the Technical Report is revised to contain the following text.

*All monitoring shall concurrently sample for both hardness and metals. Hardness analysis will be conducted on unfiltered samples according to Standard Method 2340-B at a detection level 1 mg/L CaCO<sub>3</sub>. Analysis for dissolved metals will be conducted on filtered samples using trace metal clean analytical and sampling methods. To ensure detection limits are low enough to compare to the wasteload allocations, USEPA methods 1638 and 1669 shall be used. Methods with equivalent or lower detection limits may be used after approval by the Regional Board.*

## 5.3. Comments from the United States Fish and Wildlife Service

**Comment No. 20:** It is requested that the Regional Water Quality Control Board reconsider the aforementioned recommendations [to delist cadmium]. The reason for this request is that the metal levels measured in stream sediments pose potential risks to wildlife that were not assessed in the TMDL documentation.

Portions of Chollas Creek are associated with riparian habitat, which is likely to be inhabited by small mammals, lizards, amphibians, song birds, waterfowl, and their predators. Wildlife species may be exposed to the sediment-borne contaminants through ingestion of sediment and via consumption of plants or animals that have accumulated

contaminants in their tissues. With respect to sediment-borne metals in Chollas Creek, the receptors of concern are species that consume (1) rooted vegetation (especially shoots and leaves), (2) invertebrates that have fed on contaminated vegetation, and/or (3) benthic invertebrates, including emergent insects, that live in direct contact with the sediment. Species that rely on vegetation for their food are of particular concern because plants are known to bioaccumulate metals, to the extent that some plant species are used to remediate metals-contaminated soils and sediments (e.g., Terry and Banuelos 2000).

Whether metals from Chollas Creek sediments are entering and reaching levels in plants and insects that would be unsafe for herbivores and insectivores is uncertain. However, calculations based [upon] uptake and accumulation factors in the literature (Bechtel and Jacobs 1998a & 1998b), combined with dietary screening levels based on reference toxicity values (EPA-BTAG 2002) and exposure factors for small birds and mammals (USEPA 1993, Nagy 2001) suggest that zinc and copper levels in Chollas Creek sediments pose little if any risk to wildlife, whereas lead poses a potential risk to small birds, and cadmium poses risk to both birds and mammals. Cadmium is the contaminant of greatest concern because it is known to be heavily accumulated by species of willow (e.g., 100 times concentrations in soil/sediment) and has, under natural conditions, reached levels in buds and shoots that are harmful to avian species, causing kidney damage, bone thinning and possibly eggshell thinning (Larison et al. 2000).

Data on contaminant levels in vegetation and invertebrates are needed before it can be concluded that metals in Chollas Creek sediments pose no risk to wildlife receptors. The same data are needed to confirm that cadmium in particular is not a contaminant of concern for wildlife.

According to the Source Analysis (section 3), all of the metals in question originally enter Chollas Creek with water discharged through municipal separate stormwater systems, after which a fraction of each settles into the sediment. Based on preliminary calculations cadmium and lead are accumulating to levels in sediment that pose risks of adverse effects for wildlife. Therefore, given that wildlife habitat is one of the designated beneficial uses for Chollas Creek, it is requested that cadmium continue to be considered for TMDLs.

**Response:** The San Diego Water Board appreciates the information regarding the potential accumulation of cadmium and lead in plant material that could pose a threat to birds and small mammals inhabiting the Chollas Creek riparian corridor. This type of information must be considered in making listing and de-listing decisions. Chollas Creek is listed for metals in the water column, and not for sediment metal. Given that the information is inconclusive as to the actual risk, it is not sufficient in and of itself to factor significantly into listing and de-listing decisions. Furthermore, the nexus between water column metal concentrations and final exposure to birds and mammals feeding on flora is not established. Greater weight is given to the comparison of measured concentrations against approved regulatory standards. The California Toxics Rule acute and chronic criteria are such standards. It is against those criteria that dissolved measurements of cadmium were compared in forming our recommendation to delist.

Our recommendation to de-list cadmium was based upon criteria contained in the Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (State Water Board, 2004). Despite the information provided by the commenter, cadmium still qualifies for de-listing. However, the final State decision will be made by the State Water Board. The San Diego Water Board recommendation to de-list cadmium from the List of Water Quality Limited Segments has been forwarded to the State Water Board and will not be retracted.

The San Diego Water Board would appreciate receiving the actual data used by the commenter to base conclusions. Based upon this data, it may be appropriate to list Chollas Creek for impairment to sediment toxicity on the next update of the CWA Section 303(d) List of Water Quality Limited Segments.

#### **5.4. Comments from the California Department of Transportation (May 11, 2005)**

**Comment No. 21:** Chollas Creek has little or no flow during substantial parts of the year. Under natural conditions it cannot support many of the designated uses assigned to it during dry weather such as warm freshwater habitat. Consequently, the development of a TMDL for dry weather conditions to support aquatic life is not appropriate.

**Response:** The designated Beneficial Uses of Chollas Creek must be protected during all seasons and flow conditions. Furthermore, if there is any water flowing in the creek, it is likely to support animals living in the riparian corridor ((Wildlife Habitat Beneficial Use). The Wasteload Allocations of this TMDL are designed to protect these Beneficial Uses and are appropriately applied year-round.

**Comment No. 22:** The estimate in Appendix E of the Staff Report, that freeways make up 1.52 mi<sup>2</sup> (973 acres) or 5.34% of the watershed, is too high. The Department's right-of-way within Region 9 that drains to Chollas Creek is approximately 370 acres. This includes highways 5, 15, 805 and 94, along with 3 maintenance stations and 1 park and ride lot. This area represents approximately 2.3% of the total watershed as stated in the body of the Staff Report (16,273 acres ). There is another disparity as it represents just 2.0% of the area noted in Appendix E of the Staff report (28.52 mi<sup>2</sup> / 18,253 acres).

**Response:** The San Diego Water Board appreciates CalTrans illustrating the discrepancy between our Technical Report and Appendix E. It is likely that the estimate of 18,253 acres found in Appendix E is more accurate. That number comes from a report issued by the San Diego Association of Governments in 2002 and is more recent than the 1999 report that listed 16,273 acres. The third paragraph of section 3.2 is amended to contain the following text:

*However, a 2000 report by the San Diego Association of Governments reported the Chollas Creek Watershed to contain 28.52 square miles (18,253 acres).*

This discrepancy likely results from the slightly different map coverage used by the different reports. However, the total size of the watershed and the percentage of it under the jurisdiction of CalTrans, does not affect the Load and Wasteload Allocations of this TMDL project. The formula-based approach essentially assigns concentration-based allocations to all discharges to Chollas Creek and are unaffected by the size of the area drained. The allocations apply equally to all parts of the watershed.

**Comment No. 23:** The staff report does not adequately explain the assumptions made to determine the estimated loads within the watershed. Given the small fraction of the runoff the Department contributes to the watershed, the Department's equitable annual loading and share allocation should likewise be based on tangible data. The Department has done extensive monitoring of our facilities runoff. This data is available in the report "Storm Water Monitoring and Data Management Discharge Characterization Study Report" CTSW-RT-03-065.51.42

**Response:** Load estimates of metals were generated from a watershed-scale model. The model used metal accumulation rates, wash-off rates, infiltration rates and other coefficients from the Los Angeles area. Chollas Creek specific land use classifications and hydrology from the greater San Diego area were also used. This information allowed the model to generate estimates of the amount of metals leaving various land uses and from sub-watershed areas. This approach is explained in great detail in section 5 of the Technical Report and in Appendices D, E and F.

Wasteload Allocations are formula-based and result in a concentration-based allocation that is applied equally in all parts of the watershed. All point sources, regardless of discharge volume or area drained, must meet this concentration-based Wasteload Allocation.

**Comment No. 24:** The economic analysis described in the TMDL staff report does not include the actual cost of installation of biofiltration swales/strips, detention basins and sand filter systems documented by the Department (CalTrans 2004). Table 14.1 presents cost estimate of various BMPs with wide ranging units of measurement (e.g. Vegetated swale cost presented as each, sand filter cost presented to treat the entire watershed).

**Response:** Section 14 in the Technical Report has been revised to include cost estimates for the same unit of measurement for structural BMPs. It is likely that most permittees will implement a combination of structural BMPs to achieve the Wasteload Allocations. Each cost estimate was calculated by assuming 10 percent of the urbanized portion of the watershed was treated with the structural BMP.

**Comment No. 25:** The TMDL draft staff project report grossly underestimates the cost of BMP implementation and does not consider lifecycle costs including operation

and maintenance costs. Furthermore, the Department is limited in available land within its right-of-way. This may require purchase of additional land to accommodate the space required for installation of BMPs. Our preliminary, cost to provide treatment of our drainage area is a minimum of \$25 million (based on lifecycle unit cost of \$1,525/m<sup>3</sup> of runoff for sand filters - CalTrans, 2004). This minimum cost estimate assumes treatment of 100% of the Departments contributing drainage area of 2.3% of the Chollas Creek watershed. The minimum cost does not consider land cost, design engineering, permitting and mitigation costs, or traffic control costs, which if needed may escalate the cost two to three times.

**Response:** The cost analysis in the Technical Report only estimates potential costs that can be associated with the TMDL implementation. Estimations for maintenance costs for structural BMPs were not previously included in the draft report but have been added. The need to purchase additional land for installation of structural BMPs is speculative, and depends on the type of structural BMPs implemented by the dischargers. Thus, this cost was not included in the estimations.

The San Diego Water Board is concerned that CalTrans' cost estimates are over stated. CalTrans' preliminary cost analysis of \$25 million for treatment of 100 percent of the Departments contributing drainage area was based on costs reported by CalTrans (CalTrans, 2004). The California Water Quality Control Board, Los Angeles Region and USEPA performed a comparison of cost estimates with CalTrans reported costs for the TMDL for metals in Ballona Creek (draft staff report, 2005). The report noted that CalTrans estimated costs were approximately an order of magnitude greater than the costs determined using estimates provided by USEPA and the Federal Highway Administration. It was also noted in the 2005 draft report that after review of the CalTrans study by a third party (Holmes & Narver, Inc.), the third party determined that the median costs reported by CalTrans were higher than the median costs reported by other agencies for nearly every BMP considered, including sand filters and infiltration BMPs. Recommendations were given by the third party on how costs could be reduced, including simplifying design and material components, construction of larger numbers of BMPs at one time, and implementing BMPs over a larger drainage area.

We recognize that the USEPA cost estimates were based on 1997 costs and do not account for inflation. The range of the estimated values in the Technical Report was adjusted to incorporated cost estimates based on the CalTrans 2004 study (CTSW-RT-01-050) for the majority of the structural BMPs that were addressed in the report.

**Comment No. 26:** Our greatest concern is that the staff report proposes BMPs for the reduction of metals that will not reduce the concentrations to the desired levels. Based on the Pilot Study (CalTrans 2004) average discharge concentrations for hardness, copper, lead and zinc are 46.5, 0.010, 0.003, 0.047 mg/L, respectively. Table 1 presents the calculated values that must be met based on the equations in the staff report. The sand filter is the best BMP available for reducing metals concentrations. As shown in Table 1, the copper discharge concentrations (irreducible minimum concentrations) will still exceed both the acute and chronic conditions, and lead will

exceed the chronic condition. Consequently, there is currently no technically feasible BMP that will reduce the concentrations of metals to the levels desired in the staff report.

**Table 1 Metals Concentrations from Sand Filter Effluent Compared to TMDL**

<i>Hardness = 46.5 mg/L</i>	<b>Acute Conditions (ug/L)</b>	<b>Chronic Conditions (ug/L)</b>	<b>Sand Filter Effluent (ug/L)</b>
Copper	5.9	4.2	10
Lead	25.0	1.0	3
Zinc	55.1	55.6	47

**Response:** In the Environmental Review section of the draft Technical Report, example BMPs were presented that the dischargers may use to comply with the necessary reductions. Examples included education and outreach, vegetative swales and buffer strips, diversion systems and sand filters. No single BMP may be capable of meeting the WLAs. In order to meet the Wasteload Allocations, a combination of these or other BMPs may be necessary.

## **5.5. Comments from the City of San Diego (May 12, 2005)**

### **5.5.1 General Comments**

**Comment No. 27:** The City understands the concentration limits proposed by the RWQCB for each of the metals are taken from the California Toxics Rule that was approved by the US Environmental Protection Agency (EPA) on May 18, 2000. These standards are proposed to protect the aquatic life in the creek. These limits will require the City and others to reduce concentrations of dissolved copper by 88.5%, dissolved lead by 98.7% and dissolved zinc by 77.4%.

**Response:** The City is misrepresenting the actual reductions required. The percentages mentioned represent the maximum calculated reduction required (based upon available data). The allocations of this TMDL Project are formulas that result in time- and site-specific allowable amounts of metals. Comparing these criteria against past measurements of dissolved metals reveals a range of reductions required. The average reduction required is closer to 50 percent and a significant number of previously measured metal concentrations are not exceeding their appropriate criteria.

**Comment No. 28:** Major pollutant sources are controlled by State and Federal regulations. Studies have shown that automobile emissions (from air deposition) are a significant source of metals in storm water. Automobile emissions are regulated by the State Air Resources Control Board. Automobile tires are a major source of zinc and automobile brake pads are a major source of copper. Reduction of metals from their sources is beyond the control of the City. The EPA regulates these materials under the

Toxic Substance Control Act. It will take a long time working collaboratively with others (such as the Brake Pad Partnership) to advocate for changes to currently accepted industry standards.

**Response:** The San Diego Water Board understands the complexity of metal pollutant sources and the need to abate those sources if allocations are to be met. Each involved entity must do their part to reduce metals reaching Chollas Creek. The San Diego Water Board's responsibility is to regulate those that collect, convey and discharge pollutants to water bodies. That charge is the basis for this TMDL Project.

The San Diego Water Board encourages dischargers to work with the State Air Resources Board, the United States Environmental Protection Agency and industry to abate sources of metals. The San Diego Water Board will be a willing participant in these efforts.

**Comment No. 29:** Wet weather flows move rapidly into Chollas Creek due to the urban landscape and steep slopes. The majority of these metals move through the creek during rain events as cited in the Technical Report on Page 32 "Wet weather comprises at least 99.7 percent of the total load for each metal." The collection and treatment of wet weather flows before they reach the creek will not be easy to accomplish. There is limited open space available near the storm drain outfalls to equalize or detain storm flows for treatment.

**Response:** The San Diego Water Board understands the difficulty in capturing and treating wet weather flows, especially in highly urbanized areas such as the Chollas Creek watershed. If this City chooses collection and treatment as its preferred method of compliance the allocations of this TMDL, the San Diego Water Board will work with them to overcome the obstacles. Increased street sweeping, education of land owners, partnering with industry and government, and the abatement of illicit dischargers are all actions that will reduce metals concentrations in wet weather flows. However, it will be up to the individual discharger to choose their individual method of compliance.

**Comment No. 30:** Treatment technology does not currently exist that removes metals down to the targeted concentrations. It is our understanding based upon research funded by CalTrans that removal efficiency levels are not great enough to ensure metal reductions of the magnitude needed to comply with the proposed TMDL. It will take time to pilot this technology to meet this mandate.

Removal Efficiency of Various Treatment Systems (%)*			
<i>BMP</i>	<i>Copper</i>	<i>Lead</i>	<i>Zinc</i>
Austin Sand Filter	58	39	17
Storm Water Management zeolite/perlite canister system	50	45	41
Wet Ponds where there is at least one week detention time	58	85	60

\* CalTrans BMP Retrofit Pilot Program Final Report, January 2004

**Response:** A combination of structural and nonstructural BMPs may be necessary to meet the wasteload allocations.

**Comment No. 31:** Implementation of a capital improvement program as a result of this TMDL will potentially cost the City millions of dollars. The City has not yet conducted a planning study in order to determine how many treatment systems will be required and the estimated cost associated with those systems. However, Development and Redevelopment Handbooks published by the California Stormwater Quality Association (CASQA) includes BMP cost information. This handbook states that the “typical” construction cost for a 100 acre-foot wet pond facility is \$1,170,000, noting that the actual construction cost depends on the specific site. Furthermore, the handbook notes that CalTrans spent \$448,000 for a 0.8 acre wet pond, which is located at Interstate 5 at La Costa Boulevard, as cited in the CalTrans BMP Retrofit Pilot Program Final Report. Needless to say, many BMP locations will be required within the Chollas Creek watershed to comply with this TMDL with the San Diego’s land values, the costs to construct these BMPs in the Chollas Creek watershed would be well above the average.

**Response:** At this time, it not clear how many detention ponds will be needed in the Chollas Creek watershed to ensure compliance with the allocations of this TMDL Project. It should be noted that retention / detention is only one of the available structural and non-structural BMPs that can result in reduced metals in the watershed. As the City notes, planning studies have not yet been completed and to discuss project costs is speculative at this time. The San Diego Water Board looks forward to the recommendations of such a planning study and is expects it to expand on existing Watershed Urban Runoff Management Plans.

**Comment No. 32:** The City of San Diego is concerned that this project’s CEQA review is inadequate. The City Attorney’s Office may submit separate comments regarding the CEQA review by May 25, 2005.

**Response:** Comment noted. Please see Comment No. 75 for the City Attorney’s Office comment and the San Diego Water Boards response.

### **5.5.2 Technical Comments**

**Comment No. 33:** Pg.3: the TMDL is for all upstream tributaries of the creek. This is beyond what is listed in the 303d list.

**Response:** The 2002 List of Water Quality Limited Segments lists the lowest 1.2 miles as the estimated size effected. To ensure restoration of water quality standards in this portion of the creek, all upstream sources need to meet the Wasteload Allocations of this TMDL. This is consistent with the Diazinon TMDL, adopted in 2002. Wasteload Allocations were applied to discharges throughout the entire watershed when only the lowest 1.2 miles was listed as impaired.

**Comment No. 34**



**Comment:** Pg 13: WER of unity. Please define this term

**Response:** Unity is equal to one.

**Comment No. 35:** Page 13: Although the Federal Register provides good reason why this should not be a concern, an explicit MOS was applied in this TMDL to address this possibility. What is the basis for the explicit MOS if the Federal Register does not support it?

**Response:** Clean Water Act Section 303(d)(1)(C) requires that TMDLs include a margin of safety to account for uncertainties associated with all the calculations required to establish a TMDL, including uncertainties associated with pollutant load determinations, modeling water quality, and monitoring water quality. The requirement can be satisfied by expressing the margin of safety as either unallocated assimilative capacity, (i.e., demonstrating that the pollutant loading would be less than the assimilative capacity of the waterbody), or demonstrating that conservative assumptions had been built into the calculations of the wasteload and load allocations.

The 10 percent explicit Margin of Safety (MOS) accounts for any uncertainty in the analysis of metals. Sampling will occur only 3 times throughout the year and is not likely to fully characterize actual concentrations in the creek. The actual analysis of the metals will also have some variability. Furthermore, low hardness values could make allocations close to detection limits. A 10 percent MOS adds some assurance that the allocations are providing the necessary level of protection to aquatic life.

**Comment No. 36:** Pg 14: a value of 400 mg/L will be used for hardness no matter what the extent of the exceedance. What is the basis of this limiting factor? When City of San Diego Storm Water Pollution Prevention Division staff was performing permit required Dry Weather Monitoring the average hardness value for 2003 was 987.4 and 785 in 2003.

**Response:** The California Toxics Rule caps hardness at 400 mg/L for use in both the Concentration Continuous Criteria and the Concentration Maximum Criteria. Furthermore, Appendix G shows that very few measured metal concentrations exceed their appropriate criteria at hardness values of 400.

**Comment No. 37:** Pg 1: ...all upstream tributaries to this section are considered in this TMDL? This is beyond what is listed in the 303d list.

**Response:** Please see the response to Comment No. 33.

**Comment No. 38:** Pg 2: Significant sources of all three metals to urban runoff are thought to include automobile operations (especially brake pads and tires).... The Air Resources Control Board needs to be involved where auto emissions impact water quality. Why doesn't EPA enforce the Toxic Substance Control Act 15 USCA Section

2601(b) to protect the environment from toxic substances as was the Congressional intent stated in 15 USCA Section 2601(c).

**Response:** Please see response to Comment No. 28. Furthermore, the second part of this comment should be addressed to the United States Environmental Protection Agency.

**Comment No. 39:** Pg 11: Potential BMPs are mentioned without regard to economic analysis.

**Response:** This mention of BMPs occurs in the Executive Summary section of the TMDL Technical Report where it not appropriate to include an in-depth economic analysis. The Executive Summary is intended to be a brief overview of the TMDL Project. A thorough discussion is appropriately contained in section 14, Economic Analysis.

**Comment No. 40:** Pg 12: Efforts should first be aimed at source control and then at treatment control since treatment control BMPs have a greater potential for adverse environmental impacts. The Air Resources Control Board needs to be involved where auto emissions impact water quality because they are the responsible California EPA agency. Why doesn't EPA enforce the Toxic Substance Control Act (TSCA) 15 USCA Section 2601(b) to protect the environment from toxic substances as was the Congressional intent stated in 15 USCA Section 2601(c). The best place to "control the sources" is if they are part of the formulation and EPA has the authority under TSCA.

**Response:** Comment noted and please see responses to Comment Nos. 28 and 38.

**Comment No. 41:** Pg 28: 5.1 Urban Runoff Regulation in Chollas Creek Watershed. This section only mentions the regional municipal permit, where's discussion of CalTrans and the US Navy permits?

**Response:** The Navy is discussed in section 5.1.1. It's storm water runoff is expected to go through it's MS4 system to Chollas Creek. CalTrans is mentioned in Table 5.1. Section 5.1 is revised to include the following text:

*Other responsible persons are those that hold general or individual Waste Discharge Requirements applicable in Chollas Creek. Some of the other major dischargers include CalTrans and the Navy. CalTrans is regulated under Statewide Order No. 99-06-DWQ. Storm water runoff from the United States Navy's MS4 system, as discussed in section 5.1.1, will also be regulated.*

**Comment No. 42:** Pg 32: wet weather comprises at least 99.7 percent of the total load for each metal. Why then on page D-22 was the dry weather creek flow estimated at 2.28 CFS – over 1,000 gallons per minute? Why was the dry weather model design a "steady-state" calibrated for flow?

**Response:** The dry weather flow estimate of 2.28 cfs for Chollas Creek was derived from the San Diego regional hydrologic model. It is based upon the measured dry weather hydrology from other areas in the San Diego Region. Only one dry weather data point was available for Chollas Creek. The model predicted a flow of 1.33 cfs while the actual flow was 1.0 cfs.

A steady state model was chosen to emulate the sustained base flow that is common to many urban streams when no rain has fallen. The lack of data precludes the model from generating meaningful dry weather results for Chollas Creek.

**Comment No. 43:** Pg 37: Table 5.5. What was the number of samples used?

**Response:** Dry-weather loads in Table 5.5 are based on a steady-state watershed model documented in Appendix D. This model was based on analyses and calibration to numerous flow and water quality measurements performed in Aliso Creek and San Juan Creek of Orange County, and Tecolote Creek and Rose Creek of San Diego County. The model was based on regression analyses for development of equations for prediction of steady-state flows (based on 1,235 measurements at 32 stations) and fecal coliform concentrations (based on 1,257 measurements at 37 stations) based on land use and watershed size. Additional relationships were established for prediction of enterococci and total coliform concentration as a function of fecal coliform based on larger datasets from the four watersheds monitored. Other instream flow and indicator bacteria data were used for calibration of stream infiltration and bacteria die-off rates. Calibration to these datasets are reported fully in Appendix D.

**Comment No. 44:** Pg 40 and 41: Tables 5.7 – 5.9. Review of the Santa Clara Valley information shows that 59.5% to 73.7% of the pollutants come from automobiles. How will ARB and EPA through TSAC become involved in this process?

**Response:** Please see response to Comment Nos. 28 and 38.

**Comment No. 45:** Pg 47: 5.4.5.3 ...copper plumbing corrosion in residential homes seems to add a relatively significant amount of copper, 130ug/L to 170 ug/L to the potable water supply. It seems that this TMDL is placing the burden of other programs on the MS4 permits implementors.

**Response:** Comment noted and please see response to Comment Nos. 28 and 38.

**Comment No. 46:** Pg 55: Not allowing for this interaction makes the TMDL concentration more conservative. If the WLA is 90% and the implicit MOS has a safety factor of 2; why cannot we be given some consideration for not having ion exchange because we are not in an area of acid rain?

**Response:** Acid rain is currently not a problem in San Diego. Therefore, the relatively higher pH of local rainfall keeps anion and negatively charged particles from

interacting with metals and increasing their bioavailability. This is considered an implicit Margin of Safety.

**Comment No. 47:** Pg 58: A flow based approach was used for the Chollas Creek Metals TMDL, and defines critical conditions solely based on freshwater flows rates regardless of the season. This appears to be in conflict with the statement on Pg 18, 3.2 first paragraph “*Extended periods with no surface flows occur during dry weather, although pools of standing water may be present.*”

**Response:** For practical considerations, the model had to define a break point between wet weather and dry weather flows. Based upon the calibration and validation of modeled flows from other areas of the San Diego Region, 2.28 cfs was considered the best available point. This apparent conflict with the statement in section 3.2 is a limitation of the model and yet another reason that the model was not used to calculate mass-based allocations.

**Comment No. 48:** Pg 66: The Municipal Dischargers and CalTrans are responsible to meeting the WLAs in the urban runoff prior to discharge to Chollas Creek...Where’s the US Navy?

**Response:** All statewide and San Diego Water Board orders that regulate point source discharges to Chollas Creek shall be made consistent with the Wasteload Allocations of this TMDL. Section 11.2 on page 66 does not identify specific dischargers. The Navy is mentioned in section 11.3, along with other dischargers.

**Comment No. 49:** Pg 70: the header states “Municipal Dischargers and the Navy”.... Text states “Municipal Dischargers and CalTrans”... there is a conflict here.

**Response:** The San Diego Municipal Dischargers and CalTrans are currently the only responsible entities named in Order No. R9-2004-0277. The Navy will be added to this order when it is amended. The following text is added to the end of bullet 3 of section 11.5.

*The Navy will be added to this order when it is amended to include the requirements of this TMDL Project.*

**Comment No. 50:** Pg 79: In order to comply with this TMDL project, emphasis should be placed on BMPs the remove pollutants from runoff. How will the Air Resources Control Board be involved where auto emissions impact water quality because they are the responsible California EPA agency. Why doesn’t EPA enforce the Toxic Substance Control Act (TSCA) 15 USCA Section 2601(b) to protect the environment from toxic substances as was the Congressional intent stated in 15 USCA Section 2601(c). The best place to “control the sources” is if they are part of the formulation and EPA has the authority under TSCA.

**Response:** Please see the response to Comment No. 28.

**Comment No. 51:** Pg 84: the Regional Board must consider the economic costs of the methods of compliance in this Analysis. The proposed Basin Plan amendment does not include new WQOs but implements existing objectives to protect beneficial uses. The Regional Board is therefore not required to do a formal cost-benefit analysis. This appears to be in conflict.

**Response:** Public Resources Code Section 21000 et seq. (CEQA), require that, whenever the Regional Water Board adopts rules requiring the installation of pollution control equipment or rules re-establishing a performance standard (such as WLAs in TMDLs), the Regional Water Board must conduct an environmental analysis of the reasonably foreseeable methods of compliance. This analysis must take into account a reasonable range of factors, including economics. The Regional Water Board is not required to do a formal cost-benefit analysis, which would be more detailed than the cost analysis that is contained in the draft staff report.

This TMDL implements existing water quality objectives and no analysis of the factors identified in Water Code section 13241 is required. A cost analysis that takes into account a reasonable range of economic factors to estimate the potential costs that are associated with the reasonably foreseeable methods of compliance with the TMDL is sufficient (together with other sections of the draft staff report, CEQA checklist, response to comments, Basin Plan amendment and supporting documents) to fulfill the applicable provisions of the California Environmental Quality Act (Public Resources Code section 21159).

**Comment No. 52:** Pg D-6: 1.2 Critical Conditions: critical points. Please identify where these “criteria points” are located.

**Response:** The critical point was selected at the mouth of the Chollas Creek watershed, as discussed in section 1.2 of Appendix D.

**Comment No. 53:** Pg D-8: 2.2 Dry and Wet Weather Critical Flow Conditions: The dry weather critical flow condition was based on predictions of steady-state flows, which were derived through modeling analysis of average dry weather flows in the San Diego region. This is in conflict with statements on Pg 18, 3.2. Watershed Characteristics: Chollas Creek is an urban creek with highly variable flows. The highest flow rates are associated with storm events. Extended periods with no surface flows occur during dry weather, although pools of standing water may be present.

**Response:** Since dry weather and wet weather flows are drastically different, the model had to define a break point between the two flows. Based upon the calibration and validation of modeled flows from other areas of the San Diego Region, 2.28 cfs was considered the best available point. A steady state model was chosen to emulate the sustained base flow that is common to many urban streams when no rain has fallen. While the steady-state model does not accurately reflect actual conditions in Chollas Creek, as the conflict illustrates, it is the best model possible with the available data.

The lack of data precludes the model from generating meaningful dry weather results for Chollas Creek. This limitation of the model was one reason the model was not used to calculate mass-based allocations.

**Comment No. 54:** Pg D-10: 2.4 Model Assumptions/Limitations. What was the number of data points used to prepare the model assumptions?

**Response:** The model assumptions were not empirically derived. They were formed by the modelers who relied on their experience in working in similar urban environments and upon their opinion of the data available.

**Comment No. 55:** Pg D-11: Hydrologic Modeling Parameters: These parameters are assumed to be representative of the hydrology of the Chollas Creek watershed, which is presently ungauged and therefore unverified. This is in conflict with statements on Pg 18, 3.2. Watershed Characteristics: Chollas Creek is an urban creek with highly variable flows. The highest flow rates are associated with storm events. Extended periods with no surface flows occur during dry weather, although pools of standing water may be present. It appears as if the watershed characteristics are known and were discounted.

**Response:** The qualitative observations of section 3.2 are not in conflict with the modeling parameters of Appendix D. The model attempts to mathematically define the flow conditions of the creek and produce a quantifiable estimate. This higher level of specificity requires measured estimates of flow and metal concentration that are more exact than the qualitative observations of section 3.2.

**Comment No. 56:** Pg D-13: The dry weather model was used to estimate the flow rates of urban runoff in the Chollas Creek watershed. This is in conflict with statements on Pg 18, 3.2. Watershed Characteristics: Chollas Creek is an urban creek with highly variable flows. The highest flow rates are associated with storm events. Extended periods with no surface flows occur during dry weather, although pools of standing water may be present. It appears as if the watershed characteristics are known and were discounted.

**Response:** Please see the responses to Comments Nos. 53 and 55.

**Comment No. 57:** Pg D-15: 3.1.2 Channel Geometry: .... all flow less than 15 cfs was assumed to represent dry weather flow conditions. This is in conflict with statements on Pg 18, 3.2. Watershed Characteristics: Chollas Creek is an urban creek with highly variable flows. The highest flow rates are associated with storm events. Extended periods with no surface flows occur during dry weather, although pools of standing water may be present. It appears as if the watershed characteristics are known and were discounted.

**Response:** Please see the responses to Comments Nos. 53 and 55.

**Comment No. 58:** Pg D-15: 3.1.3 Steady-State Mass Balance Overview: This predictive model represents the stream network as a series of plug-flow reactors, each reactor having a constant, steady state flow a pollutant load. This is in conflict with statements on Pg 18, 3.2. Watershed Characteristics: Chollas Creek is an urban creek with highly variable flows. The highest flow rates are associated with storm events. Extended periods with no surface flows occur during dry weather, although pools of standing water may be present. It appears as if the watershed characteristics are known and were discounted.

**Response:** Please see the responses to Comments Nos. 53 and 55.

**Comment No. 59:** Pg D-17: Model segments are assumed to be well-mixed laterally and vertically at a steady-state condition (constant flow input). This is in conflict with statements on Pg 18, 3.2. Watershed Characteristics: Chollas Creek is an urban creek with highly variable flows. The highest flow rates are associated with storm events. Extended periods with no surface flows occur during dry weather, although pools of standing water may be present. It appears as if the watershed characteristics are known and were discounted.

**Response:** Please see the responses to Comments Nos. 53 and 55.

**Comment No. 60:** Pg D-20: 3.2.2 San Diego Regional Hydrologic Model Calibration and Validation Results: The goal of calibration was to minimize the differences between observed flow and modeled flow at each calibration station location. How do you calibrate it when the Chollas Creek watershed characteristic is no flow during the dry weather? See page 18, section 3.2 in this document.

**Response:** Dry weather model results within the Chollas Creek watershed were not able to calibrated and validated. This data limitation precluded the use of the model to generate mass-based TMDLs.

**Comment No. 61:** Pg D-22: The resulting overall dry weather flow rate for Chollas Creek was 2.28 cfs. There is currently only one observed flow value available for comparison with the San Diego regional hydrologic model flow results: a flow measurement of 1.0 cfs was recorded at the in-stream dry weather flow dry sample location DW298. Please provide information on this flow data. DW298 is a City of San Diego station and our records disagree this statement.

**Response:** Dry weather data from the City of San Diego for Chollas Creek reported an estimated flow of 448.9 gpm at DW298 on September 10, 2002. There was 0 flow in 2003 at this station. This converts to 1.00015 cfs, which is the value included in Appendix D. The modeled flow of 1.33 cfs for the same watershed showed that the model is consistent with the magnitude of measured dry weather flow.

**Comment No. 62:** Pg D-42: the validation results also showed a good fit between modeled flow rates and observed flow rates, thus confirming the applicability of the

calibrated hydrologic parameters to the San Diego region. Disagree that this is applicable to Chollas Creek Watershed. Refer to measured daily average flow table in Appendix F and statement on Pg F-23 that there is a 47% difference.

**Response:** The models hydrological output was calibrated and validated for Aliso, San Juan, Tecolote and Rose Creeks. Model output for these stations resulted in the statement referred to in Appendix D. Lack of data precluded validation for modeled flow in Chollas Creek. The comparisons found in Appendix F reveal the discrepancy between modeled and observed flows for Chollas Creek. The reader is reminded that the model was not used to calculate allocations. It was only used to estimate the relative amount of metals coming from various land use types and sub-watersheds for the Source Analysis.

**Comment No. 63:** Pg G-2: percent reductions table – should be included in the technical report too.

**Response:** The percent reduction tables are properly placed in Appendix G. Since the allocations of this TMDL are formula-based and represent a moving target, the actual reductions required will vary depending on the hardness of each sample. Appendix G was meant only to illustrate the range of reductions that could be required. The range is wide and even represents many samples that will not need a reduction to meet the allocations of this TMDL Project. The evidence that establishes the allocations of this TMDL Project are unaffected by the potential requirements found in this table.

## **5.6. Comments Submitted by the Sierra Club**

**Comment No. 64** (received by oral testimony at the May 11, 2005 Hearing)

**Comment:** Sediment discharges from Chollas Creek must also be addressed.

**Response:** The San Diego Water Board is currently working with the Southern California Coastal Water Research Project to gather the necessary data to refine the watershed model. Eventually, the model will be used to generate mass-load based TMDLs for copper, lead and zinc. This is will address total metals; including sediment discharges that are likely to contain large amounts of metals.

## **5.7. Comments Submitted by the United States Navy**

**Comment No. 65:** In a simplistic view, the TMDL process identifies all pollutant sources and pollutant loading from those sources within the watershed. The total assimilative capacity of the receiving water body, while maintaining water quality standards, is calculated. Load Allocations (LA) from non-point sources and Waste Load Allocations (WLA) are then calculated for all of the pollutant loading sources previously identified within the watershed.



The draft technical report states in section 5.6, “More data are needed to better understand the impacts these suspected sources have on concentrations of copper, lead, and zinc in Chollas Creek.” Although the staff has acknowledged that more data is needed, it has elected to choose loading capacities for Chollas Creek per numeric targets from the CTR.

Staff also states that CTR-based pollutant loading “...will attain water quality standards, because the Numeric Targets are at a minimum to be protective of aquatic life and are thus conservatively considered the total loading capacity of Chollas Creek.” We do not disagree that choosing CTR limits for pollutant loading will be protective of aquatic life. However, we do disagree that this is the process that should be followed for TMDL WLA development. Instead of following the TMDL process by developing LA and WLA as described above, staff has bypassed that process and chosen to apply the most stringent pollutant limits, CTR numeric targets to the WLA component of the TMDL. This sets the wrong precedent for future TMDL development by simply choosing the most stringent standard for water quality protection instead of properly developing WLA limits.

**Response:** The choice of CTR criteria as Numeric Targets for this TMDL is highly appropriate (see section 4.0 of the Technical Report). Since CTR are designed to be protective of aquatic life, they are also appropriately used to define the loading capacity of the creek. The next step in TMDL development is to divide the loading capacity to the Margin of Safety, Load Allocations and Wasteload Allocations. Concentration-based allocations (as in this TMDL) are acceptable to the USEPA (see comment letter from the USEPA, No. 3 above). The CTR criteria are reduced 10 percent for the MOS to derive the Load and Wasteload Allocations. Therefore, CTR criteria are appropriately chosen as the basis for deriving the allocations of this TMDL. If sufficient data become available in the future to refine the watershed model, mass-based allocations may be included as part of the TMDLs for Chollas Creek.

**Comment No. 66:** An additional concern is the application of CTR numeric targets as WLA relates to storm water discharges. The vast majority of pollutant loading in Chollas Creek is from storm water runoff. CTR numeric targets are meant for making pollutant comparisons taken in the receiving water. WLA samples are taken at the discharge sources and not in the receiving water. By applying CTR numeric target values as WLA, staff is indirectly applying CTR numeric target values on end of pipe discharges (i.e. storm water discharges). This point was discussed at the May 11, 2005 SD RWVCB hearing with the State Board legal counsel John Richards. John Richards specifically states that CTR is legally applicable to receiving waters.

**Response:** Please see the response to comment No. 65.

**Comment No. 67:** Finally, applying CTR numeric target values as WLA for dischargers to Chollas Creek, while giving a large margin of safety for loading calculations, does not address the feasibility of meeting these WLA especially if measure at end of pipe. CTR numeric target values are extremely low since they were developed

to be measured in the receiving water. Municipal and industrial storm water runoff discharges will not consistently meet these limits without pretreatment. No discussion of pretreatment or the feasibility of storm water pretreatment is discussed in the Draft Technical Report.

**Response:** The San Diego Water Board cannot mandate the specific method(s) of compliance with the allocations of this TMDL. The Technical Report discusses the reasonably foreseeable methods of compliance. It is likely that two or more of these techniques will need to be employed simultaneously to sufficiently reduce metals loadings. However, it will be up to the individual discharger to choose how to best meet their allocation. If they determine that pretreatment is necessary, then the San Diego Water Board is likely to support that decision.

Furthermore, using CTR criteria as the basis for the Wasteload Allocations is not overly conservative in urban runoff dominated streams like Chollas Creek. The majority of the creek flow originates as MS4 effluent and there will be little effective dilution by the creek.

#### **5.8. Comments from the California Department of Transportation (May 25, 2005)**

**Comment No. 68:** Our previous comment letter mistakenly noted that the total right of way area is approximately 370 acres. This is the impervious area. The total pervious and impervious right-of-way and facility acreage within the watershed is approximately 1,215 acres. Therefore, Department property represents approximately 6 percent of the Chollas Creek watershed.

**Response:** The San Diego Water Board appreciates this clarification. This is much closer to the San Diego Water Board estimate of 5.34 percent of the Chollas Creek watershed being under the jurisdiction of CalTrans.

**Comment No. 69:** The Department has concerns with the statement in the March 25, 2005 draft Technical Report that states:

*While only the lowest 1.2 miles of Chollas Creek comprise the actual impaired and listed segment of the water body, all upstream tributaries to this section are considered in this TMDL because they deliver metals loads to the lower segments.*  
(15)

The 2002 303(d) has identified the lower 1.2 miles of Chollas Creek as impaired for copper, lead, and zinc, not the entire watershed. Consistent with the TMDL policy and guidance, TMDLs are to address waters identified by the State as waters "for which the effluent limitations required by Section 1311(b)(1)(A) and Section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters." (Title 33, U.S.C.A., Section 1313(d) [Clean Water Act Section 303(d)]). Only the lower 1.2 miles of Chollas Creek has been so identified on the State's 303(d) list of

impaired waters. Therefore, the Metals TMDLs to be adopted for Chollas Creek should only apply to the 1.2 miles in the lower watershed listed as impaired.

**Response:** Please see the response to Comment No. 33.

**Comment No. 70:** We are also concerned with the moving target concentration levels that are presented in the staff report. To clarify our previous comment that concentrations cannot be met with current technology, we are attaching four graphs.

The first graph shows the concentration for copper that must be met for the range of hardness values for both acute and chronic conditions. The horizontal line shows the copper concentration of 10 mg/L for treated highway effluent from a sand filter. The sand filter will not meet the copper acute concentration when the hardness is less than 82 mg/L and will not meet the chronic condition when the hardness is less than 129 mg/L. For reference a vertical line at 81 mg/L is shown for the average hardness within Chollas Creek (from Appendix A of the TMDL documents). At that hardness of 81 mg/L, available treatment technology for metals reduction, such as sand filters, will not adequately reduce copper concentrations to either of the TMDL limits.

The second and third graphs show the concentration for lead that must be met for the range of hardness values for the acute and chronic conditions. In both graphs, the horizontal line shows the lead concentration of 3 mg/L for sand filter effluent. The second graph illustrates that the sand filter will not meet the lead acute concentration when the hardness is less than 8 mg/L. The third graph shows the sand filter will not meet the lead *chronic* concentration when the hardness is less than 130 mg/L. The vertical reference lines show that at average hardness of 81-mg/L sand filters will adequately reduce lead concentrations below acute conditions but not below chronic conditions.

The fourth graph shows the concentration for zinc that must be met for given hardness values for both acute and chronic conditions. The horizontal line shows the zinc concentration of 47 mg/L for sand filter effluent. The sand filter will not meet the zinc acute or chronic concentration when the hardness is less than 39 mg/L. At average hardness of 81-mg/L sand filters will adequately reduce lead concentrations below both TMDL limits.

**Response:** Please see the response to Comment No. 26.

**Comment No. 71:** The USEPA cost estimates are based on a new construction cost for biofiltration swales and strips, bioretention, detention basins and sand filters. These costs do not consider the unique and challenging conditions and significant additional cost required to implement BMPs in a retrofit situation. In addition, the costs are not adjusted to 2005 dollars and therefore cannot be compared. The EPA costs for biofiltration swales and strips is based on 1991 dollars, the EPA costs for, bioretention, detention basis and sand filters is based on 1997 dollars. The CalTrans cost information is based on 1999 dollars. (CalTrans 2004, CTSW-RT-01-050).

**Response:** Cost information, based on the CalTrans 2004 report, were incorporated into section 14 of the draft staff report for some of the structural BMPs (see also response to comment no. 10).

**Comment No. 72:** Indirect atmospheric deposition of metals is recognized as a significant (or potentially significant) source of copper, lead, and zinc pollutants that accumulate in the watershed. These deposited metals are washed off and transported to the receiving waters by storm drain systems during storm events. It is important to address this source in the TMDL document.

The Department is willing to partner with municipalities or other agencies on a pro-rata basis to implement measures that are technically feasible and justifiable economically.

**Response:** Please see the response to Comment No. 28.

## **5.9. Comments from the Environmental Health Coalition**

**Comment No. 73:** We also strongly recommend that the Regional Board add requirements for non-structural actions that the dischargers should take and implement. Since at least one of the loading sources is vehicle use, CALTRANS and the impacted cities and the Navy can be expected to use their considerable lobbying influence and develop local, statewide, and even federal policies that will assist in achieving water quality protection.

**Response:** Please see the response to Comment No. 28.

## **5.10. Comments from the City of San Diego (May 25, 2005)**

**Comment No. 74:** At the California Stormwater Quality Association's May 13, 2005 general meeting, the latest information on air deposition as a source of storm water pollution was presented. Our belief that eliminating air deposition sources will be very challenging was validated by the State Water Resources Control Board Chairman Art Baggett and other speakers. The City believes that it is important to engage the California Air Resources Board, Air Pollution Control District, and the Environmental Protection Agency (EPA) in the pollutant load reductions intended to protect our local receiving waters. Accordingly, we request that the proposed TMDL be amended to assign a load allocation specifically for air deposition. These federal and state agencies would then be in a position of responsibility to pursue research projects that increase our understanding of air deposition and the water quality impacts.

**Response:** Please see the response to Comment No. 28. Developing a Load Allocation (LA) for air deposition is an adaptation of the TMDL that could be done in the future after appropriate data are collected. The LA for air deposition would still be assigned to

the MS4 dischargers since air deposited metals are conveyed to Chollas Creek via the MS4s, but would help establish the scope of the problem.

**Comment No. 75.A:** The Technical Report and Appendices Fail to Properly Address the Potential Environmental Impacts of Compliance with the Proposed TMDL.

A. The Certified Regulatory Program Exemption Still Requires the Regional Board to Meet the Core Requirements of CEQA.

The Technical Report's discussion entitled "Environmental Review" begins with the proposition that adopting a TMDL is part of the Basin Plan amendment process, and is "exempt from CEQA's requirements to prepare an Environmental Impact Report (EIR), Negative Declaration, or Initial Study." Technical Report at 76. We note that Public Resources Code § 21080.5 only exempts certified programs from the requirements of Chapters 3 and 4 and § 21167. Because Chapter 3 of CEQA does not address Negative Declarations or Initial Studies - those requirements are contained in Public Resources Code § 21080 located in Chapter 2.6 - the Technical Report's claimed exemption is overbroad. In addition, the Technical Report omits reference to the requirement that to claim the exemption, the Regional Board must strictly adhere to the certified regulatory program. Mountain Lion Foundation v. Fish and Game Commission, (1997) 16 Cal.4th 105, 132.

Applying these principles to this rulemaking, the Board's CEQA regulations, found in Title 23 of the California Code of Regulations, require "any standard, rule, regulation, or plan proposed for Board approval to be accompanied by a completed Environmental Checklist" contained in Appendix A to this subchapter." 23 C.C.R. § 3777(a). In addition, CEQA requires the decision of the Board to be supported by substantial evidence. Public Resources Code § 21168.5 Thus, the determination of whether a proposed standard, rule, regulation or plan may have a significant impact on the environment is determined, at least in part, by a review of the required Environmental Checklist, the conclusions of which must in turn be supported by substantial evidence.

As pointed out in detail below, the required Environmental Checklist, which is Appendix I to the Technical Report, contains no evidence to support the conclusion that most resource areas will not be impacted by the TMDL. This is due in part to the narrow view the Report takes with regard to the impacts that must be reviewed, as discussed in section B; the contradictory broad view on the Board's authority to defer environmental analysis under the notion of tiering, as discussed in section D; and the conclusion that any environmental analysis would be speculative, which is made without the required thorough analysis.

**Response:** Comment noted. The San Diego Water Board disagrees that the "Technical Report's claimed exemption is overbroad" and that it is not strictly adhering to the certified regulatory program.

Section 21080.5 of the Public Resources Code provides that a regulatory program of a

State agency shall be certified by the Secretary for Resources as being exempt from the requirements for preparing EIRs, Negative Declarations, and Initial Studies if the Secretary finds that the program meets the criteria contained in that code section. (See Title 14 California Code of Regulations (CCR) 15250.) A certified program remains subject to other provisions in CEQA such as the policy of avoiding significant adverse effects on the environment where feasible. The State Resources Agency has certified the Regional Board's basin-planning program as exempt from the requirement to prepare environmental documents under CEQA. [14 CCR15251 (g)]. In lieu of preparing an environmental impact report, negative declaration or initial study, the State and Regional Water Boards must comply with the State Water Resources Control Board's regulations on exempt regulatory programs when they amend their basin plan. [23 CCR 3775-3782]

The San Diego Water Board has strictly adhered to the requirements of CEQA and the State Water Board's CEQA Implementation Regulations found in Title 23 of the California Code of Regulations. The evidence the San Diego Regional Board relied on to complete the CEQA Checklist includes the California Stormwater Quality Association's 2003 Stormwater BMP Handbook, the USEPA's 1999 National Menu of Best Management Practices for Stormwater-Phase II, USEPA's 1999 Preliminary Data Summary of Urban Storm Water Best Management Practices.

**Comment 75.B:** The Technical Report Fails to Address the Topics Required By CEQA for Such Regulations.

The Technical Report concedes that the Board is subject to the provisions of CEQA addressing Environmentally Mandated Projects, Public Resources Code §§ 21159 – 21159.4. See Technical Report at 77. The Technical Report then fails to address the topics required under those provisions.

CEQA requires environmental agencies to include in their environmental documents: (1) the reasonably foreseeable environmental impacts of the methods of compliance; (2) an analysis of reasonably foreseeable mitigation measures; and, (3) an analysis of the reasonably foreseeable alternative means of compliance with the rule or regulation. See Public Resources Code § 21159(a). CEQA further states the environmental analysis *shall* take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites. Public Resources Code 21159(c).

Here, the Technical Report contains only a list of some of the "alternative means of compliance with the rule or regulation," identifying certain nonstructural and structural Best Management Practices (BMPs). Technical Report at 79-80. The Report goes on to state - without evidence or support - that staff cannot analyze the environmental impacts of the methods of compliance because "identifying the specific projects that the dischargers might implement is overly speculative at this time." Technical Report at 80.

This statement completely ignores the obligations imposed by CEQA. The Act unambiguously states that the Board is required to evaluate the reasonably foreseeable *impacts* of the *methods* of compliance. Public Resources Code § 21159(a) (emphasis added.) Thus, once staff has identified the list of compliance methods, staff is to continue

with an analysis of the environmental impacts of those methods, giving consideration to the factors listed in 21159(c). To the extent that Appendix I can be characterized as containing "analysis" the bulk of the "analysis" is a near blank checklist that concludes - again without support - that there will be "no impact" (as distinct from a "less than significant impact") to all resource areas but biology. This blank checklist, however, only serves to "enlarge the scope of fair argument by lending a logical plausibility to a wider range of inferences." Gentry v. City of Murietta, (1995) 36 Cal.App.4<sup>th</sup> 1359, 1378-1379 (citing Sundstrom v. County of Mendocino (1988) 202 CalApp.3d 296. ("The agency will not be allowed to hide behind its own failure to gather relevant data ... CEQA places the burden of environmental investigation on government rather than the public. If the [lead] agency has failed to study an area of possible environmental impact, a fair argument may be based on the limited facts in the record."))

Thus, an adequate environmental analysis would analyze the reasonably foreseeable impacts of road and street maintenance; the construction of vegetated swales and buffer strips; the construction and maintenance of bioretention facilities, detention basins, and retention ponds; the installation of sand filters, and the installation of diversion systems. Public Resources Code § 21159(c) requires this analysis to consider the impacts of constructing the various ponds, basins and "bioretention facilities" in the Chollas Creek watershed (specific sites and geographic areas), the costs of acquiring land in a "highly urbanized area" to construct such facilities (the environmental, economic, technical and population factors), and the ability to construct such facilities in the topography of the Chollas Creek watershed (the environmental, economic, and technical factors.)

The proper application of these provisions to Chollas Creek and the City of San Diego would proceed as follows. The City first notes that sanitary sewer systems are not designed to handle the volume of large storm events, and State Water Resources Control Board grant and loan guidelines prohibit the commingling of storm water flows in the sanitary sewer system. So, simply diverting urban runoff into the existing sanitary system is not necessarily an option. In addition, none of the listed non-structural BMPs reduces metals concentrations to level required by the TMDL. Accordingly, unless an unknown technology comes into existence, structural BMPs will be required to achieve compliance.

Turning to the data in the administrative record, the two dominant land uses in the Chollas Creek watershed are residential and open space. Technical Report, Table 3.2. In short, this is an area where homes meet the natural environment. Thus, there are natural views without the attendant noise generation of commercial and industrial activity.

Turning to the design, construction and operation of a basin or pond, according to the City's information an average storm event in the Chollas Creek watershed will generate 708 acre-feet of flow in Chollas Creek. Accordingly, to implement a bioretention facility, detention basin, or retention pond<sup>2</sup>, the City will need to construct a basin capable of holding at least 708 acre feet of water in a highly urbanized area. If the City needs to

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<sup>2</sup> The City recognizes that there are important differences in these structures; however, they all change the rate at which storm water dissipates, so all require additional land area to hold accumulated storm flows.

retain flows for a storm event greater than average, the size will be at least double. The necessary land area would also increase if treatment facilities or pumping equipment is needed. Thus, the following impacts are reasonably foreseeable - regardless of the specific site in the Chollas Creek watershed - from the construction of a structural BMP.

**Aesthetics** - the construction of a concrete-lined basin equipped with pumps or treatment facilities within the creek bed itself would substantially degrade the existing visual character of the creek and its surroundings, particularly in certain canyon areas that remain relatively undisturbed.

**Air Quality** - the operation of diesel-powered construction equipment during construction, and the operation of diesel-powered pumps as part of project operation may expose sensitive receptors to substantial concentrations of diesel particulate - a known, highly toxic air contaminant.

**Biological Resources** - the construction of structural BMPs may result in substantial adverse impacts by filling the wetland areas of the creek.

**Hydrology and Water Quality** - the existence of structural BMPs will substantially alter the existing drainage pattern of Chollas Creek, which would result in siltation upstream from the BMP structure as flow is slowed and detained by the BMP.

**Noise** - the operation of pumps to aerate ponds for vector control, or to move water to treatment facilities, will result in a substantial temporary or periodic increase in ambient noise levels in the vicinity above current levels.

**Population and Housing** - the land area necessary to construct a basin and associated pumping or treatment facilities may result in the condemnation of homes resulting in the displacement of existing housing or persons, necessitating the construction of replacement housing elsewhere. Similarly, the use of vegetated swales or bioretention facilities do not remove storm water from the affected area as rapidly as current structures, accordingly, the City will need to secure additional land to accommodate additional water.

**Utilities and Service Systems** - if treatment facilities or pumping is required, these facilities will require electrical power. If that power is provided by the grid, these facilities will place additional strain on the ability of the grid to service the area, and will result in an increase in air pollutant emissions due to greater electrical output for the grid.

The Technical Report also completely ignores the fact that if retention ponds are used, additional environmental impacts to air quality, traffic, and population and housing might result from construction work installing the separate infrastructure required by law to transport reclaimed water separately from drinking water supplies.

Therefore, the Technical Report's conclusion that there will be no impacts to listed resources conflicts with the only evidence in the record - that the construction of



structural BMPs might result in significant impacts to aesthetics, air quality, biological resources, hydrology and water quality, noise, population and housing, and utilities. Although the Regional Board does not need to prepare a true EIR, the content of the Technical Report must still address the substantive requirements of CEQA. To the extent the Technical Report concludes in Appendix I that there will be no impact on a number of resource areas, these conclusions are not supported by substantial evidence and therefore the Technical Report does not fulfill the CEQA's requirement that the decision makers be informed of the environmental impacts of the proposed action.

**Response:** As stated in the Technical Report, identifying the specific projects that the dischargers might implement is speculative at this time. Future CEQA documents prepared for specific BMP implementation projects will identify site-specific environmental impacts and the need for feasible mitigation measures associated with construction. The environmental analysis identified the environmental impacts and mitigation that might reasonably result from implementation of general types of structural BMPs for reduction of metals. Furthermore, in response to the City's comments that the environmental analysis was inadequate, additional discussion was added to the Environmental Review section and CEQA Checklist and is summarized in this response.

In general, in order to avoid adverse environmental impacts from implementation, a combination of structural and nonstructural BMP may need to be implemented by the dischargers. BMPs should be chosen that are not only effective at reducing metals loading, but that also minimize adverse impacts to the environment. Factors to be considered to reduce environmental impacts include the type, location, size and combination of BMPs chosen.

The draft Technical Report identified diversions both within the creek and at storm drains emptying into the creek as possible BMPs that may be employed to meet the TMDLs. However, the San Diego Water Board revised the Technical Report to remove in-creek diversions as acceptable BMPs since the wasteload allocations must be met in urban runoff before it discharges to receiving water (Chollas Creek). Thus, BMPs implemented in the channel of Chollas Creek will not ensure that the WLAs are met in urban runoff. Therefore, the magnitude of flow that would need to be captured by diversions is likely to be much smaller than proposed in this comment since any diversions would be at the end of individual storm drains. If basins or ponds are employed as BMPs, the size, location and number of structures should be considered to minimize adverse environmental impacts. Whether or not the dischargers choose to divert urban runoff, along with the amount diverted, to the sanitary sewer system is speculative at this time and should be analyzed under a project specific environmental review.

The San Diego Water Board agrees with the City that some structural BMPs must be constructed, and that impacts associated with general construction practices are reasonably foreseeable. The City commented that construction of structural BMPs might result in adverse impacts to aesthetics. In order to lessen potential impacts, BMPs should be properly designed, maintained and sited. Further, BMPs should be designed when feasible to maintain or create habitat, recreational areas and green spaces. Since in-creek

diversions should not be used as BMPs, there should be no adverse impacts on aesthetics resulting from construction of concrete-lined basins or treatment facilities within the creek.

The City commented that construction of structural BMPs might adversely affect air quality. Potential impacts are likely to be limited and mostly short-term in nature. Impacts may be mitigated through measures such as limiting hours and amount of construction, eliminating excessive idling when vehicles are not in use, limiting construction during periods of poor air quality, and/or using alternative fuel vehicles rather than diesel fuel vehicles. Any impacts to air quality, both short-term and long-term, would be subject to regulation by the appropriate air pollution control agencies under a separate process.

The City commented that construction of structural BMPs might result in substantial adverse impacts by filling wetland areas of the creek. BMPs should be chosen that do not result in this adverse impact. Any construction that might result in impacts to wetland areas would be subject to regulation by the appropriate governmental agencies, including the San Diego Water Board and the U.S. Army Corps of Engineers under a separate process.

The City commented that the construction of BMPs might result in impacts to hydrology or water quality by altering the existing drainage pattern of Chollas Creek. As discussed in the draft Technical Report, BMPs should be properly designed and sited to minimize alterations in flow, as well as siltation.

The City commented that noise levels might increase as a result of the construction of structural BMPs. Increased noise levels from construction should be limited and short-term, and may be mitigated through restricted or limited hours of construction. Increased noise resulting from pumps used to control vectors or for the transport of water for treatment might be mitigated through engineering controls such as through insulation of pumps.

The City identified potential impacts to population and housing resulting from the construction of structural BMPs. While it is reasonable to assume that structural BMPs such as sand filters or vegetative swales might be necessary to achieve compliance with the TMDLs, the statement that housing would be displaced to achieve compliance with the TMDLs is speculation. Structural BMPs may be chosen that minimize potential impacts to housing. For example, subsurface sand filters are suitable for urban settings and designed to accommodate limited land area. The extent to which implementation of structural BMPs might impact population and housing is purely speculative and should be considered at the project-level stage.

The City identified potential impacts to air quality from utilities and service systems if treatment facilities or pumping is required. Compliance with the TMDLs will likely involve a combination of different types of structural BMPs, as well as nonstructural BMPs and infiltration devices that should not significantly impact energy demands.

Furthermore, as mentioned previously, impacts to air quality would be subject to regulation by the appropriate air pollution control agencies. Any potential impacts to utilities and service systems that might result in impacts to air quality are too speculative to analyze at this time and should be considered at the project-level stage.

The City also identified as a concern the potential impacts to air quality, traffic, and population and housing resulting from construction of infrastructure if water is reclaimed for usage from retention ponds. Whether or not retained water will be used for reclamation is speculative since it is based on the assumption that retention ponds will be built and that water will be reclaimed for other uses. Any impacts associated with water reclamation would need to be considered under a project specific environmental document.

A final revision was made to correct a typographical error in the CEQA Checklist (Appendix I). On page 3 of the Checklist, the first box was checked by mistake, instead of the second box. This typographical error has been corrected and the second box, which states “*I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent*” is now checked..

**Comment 75.C:** The Technical Report Improperly Applies Notions of Speculation to Avoid Analysis.

As to the claim that any analysis regarding indirect impacts would be speculative, the Technical Report diverges significantly from the text of Guidelines § 15145 and the reported cases upholding agency decisions to terminate analysis based on speculation.

The CEQA Guidelines codify the notion that if - ***after a thorough investigation*** - the lead agency finds that ***a particular impact*** is too speculative for evaluation, the lead agency ***may terminate discussion of the impact and state its conclusion***. CEQA Guidelines § 15145 (emphasis added). Thus, in Marin Municipal Water District v. KG Land California Corporation, (1991) 235 Cal.App.3d 1652, the Court of Appeal upheld the determination of the City of Marin that exact location of growth impacts outside the City from a new water connection moratorium was too speculative. Similarly, the EIR properly concluded that the traffic impacts from a moratorium on commercial construction were speculative because traffic leaving the City may increase as residents travel for jobs, but incoming traffic may decrease due to fewer businesses.

The analysis for the Chollas Creek TMDL provides an interesting contrast to Alliance of Small Emitters/Metals Industry v. South Coast Air Quality Management District, (1997) 60 Cal.App.4<sup>th</sup> 55, where an agency's environmental analysis for a resource protection regulation claimed meaningful analysis was too speculative. In Alliance of Small Emitters, the South Coast Air Quality Management District evaluated the environmental impacts for employing known pollution control technology, but correctly claimed that it could not assess the environmental impacts of pollution control technology that had not yet been developed. The Court of Appeal upheld the District's conclusion that it could not

evaluate the impacts of unknown technology. In contrast, the Technical Report claims that the potential indirect environmental impacts from employing **known pollution control technology** cannot be assessed. There are at least three problems with this claim. First, it directly contradicts Public Resources Code § 21159(a)(1), which expressly requires an evaluation of the reasonably foreseeable impacts from the methods of compliance. Second, the report appears to claim that site-specific information is needed to evaluate the impacts of the listed methods of compliance. The report fails to recognize that it is possible to evaluate the potential impacts from constructing and maintaining "vegetated swales that slow runoff velocities," "bioretention facilities," "basins and ponds," and "diversion systems" because these structural BMPs change runoff in particular ways. It is not a long journey, once a thorough investigation is undertaken, to a discussion of environmental impacts that arise from these BMPs once the manner in which these structural BMPs change runoff is stated. Third, Guidelines section 15145 expressly states that there be a discussion that is terminated upon discovery that there will be speculation. Here, unlike Marin Municipal Water District, there is no discussion of how conflicting conclusions may result depending on uncertain future conduct.

Accordingly, a claim that the analysis of the indirect environmental impacts cannot be completed because the impacts are speculative is not supported by substantial evidence in the record.

**Response:** The San Diego Water Board disagrees with the City's claim that the draft Technical Report improperly applied the use of speculation to avoid analysis. The CEQA Checklist identified the general environmental impacts and mitigation measures associated with treatment control BMPs that might be implemented by the dischargers. Furthermore, in response to the City's comments, additional discussion was added to the environmental analysis regarding potential environmental impacts and mitigation measures associated with general construction practices.

As stated in the draft Technical Report, identifying the specific projects that the dischargers might employ to implement the TMDLs is speculative at this time. Under Water Code section 13360, the San Diego Water Board cannot specify the design, location, type of construction, or particular manner of compliance with waste discharge requirements or other orders, and dischargers can comply in any lawful manner. This restriction is a shield against unwarranted interference with the ingenuity of the party subject to waste discharge requirements, who can select among available BMP strategies to comply with the TMDLs' wasteload allocations.

There are a myriad of BMPs that dischargers might choose to select, combine, cite, and optimize. Therefore, the precise type, location, and significance of the environmental impacts of possible projects cannot be determined at this time. Future CEQA documents prepared for specific BMP implementation projects will identify site-specific environmental impacts and the need for feasible mitigation measures.

**Comment 75.D:** The Technical Report Improperly Defers Environmental Analysis under the Rubric of Tiering.

The Technical Report states:

The Regional Board's method of analysis to identify environmental impacts associated with the Chollas Creek TMDL project is based on a "tiering" approach to provide increased efficiency in the CEQA process. Tiering allows the Regional Board to limit its analysis in this document to the broad environmental issues at the Basin Plan amendment "performance standard" adoption stage, which are ripe for decision. The Regional Board is not required, at the Basin Plan amendment adoption stage, to evaluate environmental issues associated with specific projects to be undertaken later to comply with the performance standard. CEQA provisions allow for project level environmental considerations to be deferred so that more detailed examination of the effects of these projects in subsequent second tier CEQA documents can be made by the appropriate lead agency.

Technical Report at 77.

Where a lead agency is using the tiering process in connection with an EIR for a large-scale planning approval ... the development of detailed, site-specific information may not be feasible but can be deferred, in many instances, until such a time as the lead agency prepares a future environmental document in connection with a project of a more limited geographic scale, so long as deferral does not prevent adequate identification of significant effects of the planning approval at hand.”

#### CEQA Guidelines § 15152(c)

There are a number of problems with the Board's reliance on tiering. First, there is no authority for the proposition that one agency may develop a first tier document, and then have a completely different agency be lead agency for the subsequent environmental review. Tiering is based on the notion that the same lead agency will later consider the project level, site-specific impacts. The Regional Board specifically contemplates that other agencies will handle the environmental review for subsequent projects, and more importantly, fails to identify the more limited, future project that will be undertaken by the Regional Board.

Second, the tiering statutes contemplate serious discussion of the potential environmental impacts in the first tier document. Section 21068.5 unambiguously states that the first tier documents will be environmental impact reports. While the Regional Board need not prepare a document labeled "Environmental Impact Report," the hallmark of these documents is a full discussion of the types of environmental impacts that may occur when the plan is implemented. The Technical Report prepared for the Chollas Creek TMDL, as noted previously, defers all meaningful discussion of the environmental impacts (particularly indirect impacts) of the TMDL implementation plan as speculative. Such a document is worthless in subsequent environmental review because it contains no analysis to incorporate by reference or otherwise inform the subsequent decision makers of the potential environmental consequences of their action.<sup>3</sup>

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<sup>3</sup> The City notes that while it may not be able to truly "tier" off the Regional Board's environmental analysis, CEQA allows agencies to incorporate by reference discussions in other CEQA documents to eliminate redundancy and expedite environmental review. If the technical report contained an adequate

Here, the Technical Report is simply deferring almost all analysis and punting the hard work and hard decisions to the cities and other agencies that will actually implement the TMDL, instead of ensuring that the Board understands the full gamut of environmental impacts that may come from this new regulation. This does not comport with the Legislature's declaration that "government agencies at all levels ... consider qualitative factors as well as economic and technical factors and long-term benefits and costs, in addition to short-term benefits and costs and to consider alternatives to proposed actions affecting the environment" and that "[CEQA] is an integral part of any public agency's decision making process." See Public Resources Code §§ 21001(g) and 21006.

#### Conclusion

The Technical Report gives short-shrift to the requirements of the California Environmental Quality Act on a number of levels. These claims are not supported by the substantial evidence such that a bridge spanning the analytic gap between the findings required by CEQA and the evidence in the record can exist. The Technical Report does not advise the Board members of the potential environmental impacts, so their decision will not be informed - informed decision making is one of the core purposes of CEQA. Accordingly, the City recommends that the Regional Board defer action on this TMDL rulemaking until an adequate environmental impact analysis is prepared, circulated and the Technical Report amended to reflect the evidence developed in that analysis.

**Response:** The San Diego Water Board disagrees that the Technical Report deferred all discussion of the environmental impacts of implementation as speculative. Furthermore, as described earlier, discussion was added to the Technical Report on the potential environmental impacts and mitigation measures associated with general construction practices. The Environmental Review section and the CEQA Checklist provide adequate discussion regarding these impacts and associated mitigation measures. Therefore, additional time is not necessary to act on the TMDLs.

For TMDL Basin Plan amendments the Regional Water Boards prepare the environmental documents required by the State Water Board's CEQA Implementation Regulations [23 CCR 3777] for Environmentally Mandated Projects. This is a type of "tiered" environmental review document whose procedures are described in Public Resources Code sections 21159 through 21159.4. However, the San Diego Water Board agrees that the use of the word "tiering" to describe the approach taken in the Environmental Analysis was inaccurate. Accordingly, the Technical Report was modified to not equate the Environmental Review and Economic Analysis (section 13 and 14) with a first tier CEQA document. This change does not affect the analysis in any substantial way.

#### 5.11. Comments from the Industrial Environmental Association

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analysis, the City could incorporate be reference these discussions when implementing the BMPs necessary to comply with the TMDL

**Comment No. 76:** While we are strong supporters of the TMDL process and recognize the urgent need to improve water quality, we feel the method proposed by Regional Board staff to use the CTR as numeric limits for stormwater is not only inappropriate but more importantly will not be able to achieve the level of environmental benefits that would be derived from a better defined program.

Our understanding of the way this TMDL is supposed to work is that based on monitoring data from the watershed, sources of the pollutants identified as contributing to the impairment in Chollas Creek would be assigned wasteload allocations. In turn, there would then be an implementation plan and a time schedule to comply with that allocation.

Instead, the Regional Board staff is substituting this methodical and scientifically based wasteload allocation process as set forth in the State Water Board's TMDL policy with the blanket use of the CTR. Use of the CTR in this way is not rational, practical, nor cost-effective. Without a proper analysis and study and appropriate wasteload identification and allocations, sources may be forced to spend countless dollars on BMPs or other diversions that don't most directly get at the problem because the appropriate process has not been used to define their wasteload allocations.

While we acknowledge the statement made at the public hearing on the TMDL by the State Water Board Legal Counsel John Richards that the CTR is legally applicable to receiving waters, the CTR was never intended to be used, nor do we believe should be used, as an end-of-pipe, never-to-be-exceed limit as it would be applied to stormwater.

It is our position that this Chollas Creek TMDL will be a template for others in the future, and we urge that great care be taken so that future TMDLs will be (1) technically sound; (2) incorporate cost-effective approaches; and (3) be consistent with state policy before it is adopted.

We would ask that you reopen the hearing on this matter for a full and comprehensive discussion of the following:

Develop Waste Load Allocations: Source analysis must be used in development of waste load allocations. More work is needed to develop scientifically appropriate levels.

Application of Numeric Limits such as CTR are inappropriate for Stormwater: With the use of the CTR as an interim BMP approach, this TMDL will require that the local receiving waters meeting the CTR limits under all conditions regardless of storm size. By extension, any NPDES permitted discharges exceeding this level must be brought into compliance, and this would likely occur through the imposition of CTR numeric limits directly to storm water. This is contrary to the approach envisioned by USEPA, which has stated that wet-weather is difficult to subject to numeric limits, since storms vary in size, location duration and magnitude. In November 22, 2003, EPA guidance on the establishment of TMDLs, EPA recommended that effluent limits be expressed as best management practices or other similar requirements, rather than as numeric effluent

limits, and that "if it is determined that a BMP approach (including an iterative BMP approach) is appropriate to meet the storm water component of the TMDL, EPA recommends that the TMDL reflect this."

**Response:** Please see response to Comment No. 65. Furthermore, the Technical Report (section 10.2) has been revised and discusses the various approaches available to ensure this consistency. Consistency can be achieved by numeric effluent limitations, a process of escalating BMPs, or both. Regarding the November 22 USEPA guidance, WLA's may be incorporated into WDRs as "non-numeric WQBELs" such as a BMP approach. Nothing in this TMDL precludes the San Diego Water Board from adopting WQBELS in WDRs consisting of a BMP approach, or alternatively a numeric effluent limitation approach, or both.

**Comment No. 77:** Source Control and Atmospheric Deposition Beyond Control of Permittees: We are concerned that the TMDLs make the NPDES permittees responsible for metals pollution outside of their jurisdiction and control. The TMDL documents recognize the large amounts of metals in the watershed and waterways coming from aerial deposition, i.e., from metals found in air and vehicular pollution. The TMDLs should make proper adjustments for sources of metals that are beyond the control of the permittees to regulate - including copper and zinc found in vehicle brake pads, the zinc found in vehicle tires and metals from other diffuse metal sources.

The Regional and State Water Boards should form a partnership with USEPA to address source control issues, instead of forcing unnecessary capital improvements upon local government and other permittees.

**Response:** Please see response to Comment No. 28.

**Comment No. 78:** Background Contributions: Naturally occurring background contributions must be acknowledged when calculating the wasteload allocations.

**Response:** As described in section 5.4.1 of the Technical Report, background sources are not shown to be a significant source of metals to Chollas Creek. Thus a Load Allocation for background sources is not included in this TMDL Project. Since this is a concentration-based allocation, allocations to background do not affect the Wasteload Allocations.

**Comment No. 79:** Inadequate Economic Review: We are also concerned that the board has failed to conduct 13000 and 13241 reviews as required under the Porter-Cologne Act. These state code sections require the board to review the effects of the TMDL on the local economy. We believe the TMDL would actually be improved with proper economic review, since the review can focus on the most cost-effective solutions.

**Response:** Neither Water Code section 13000 nor section 13241 specify that the San Diego Water Board is required to conduct an economic review of the impacts of implementing a TMDL Basin Plan amendment. Section 13000 lists the legislative



findings for the Porter-Cologne Act and no specifics on conducting an economic review are specified in this section. Section 13241 addresses the establishment of water quality objectives for the water quality control plans, or Basin Plans. This section would apply if the San Diego Water Board amends the Basin Plan to establish new water quality objective. The Chollas Creek metals TMDL is not establishing new water quality objectives.

Under federal and state law, the Regional Water Boards are required to include TMDLs in their Basin Plans. There are three statutory triggers for an economic or cost analysis in basin planning, which are:

1. Adoption of an agricultural water quality control plan;
2. Adoption of water quality objectives; and
3. Adoption of a treatment requirement or performance standard (CEQA).

The first two triggers do not apply to the Chollas Creek metals TMDL. The Chollas Creek metals TMDL will require amending the Basin Plan and therefore requires the Regional Water Board to comply with CEQA. Economic factors must be considered as part of the CEQA analysis. In general, CEQA requires the Regional Water Boards to consider economic factors only in relation to physical changes in the environment (see California Code of Regulations, title 14, section 15064(e)). The Regional Water Boards should determine if (1) the allocations are being attained, (2) if not, what methods of compliance are reasonably foreseeable to attain the allocations; and (3) what are the costs of these methods. Section 14 of the Chollas Creek metals TMDL draft report addresses these issues.

**Comment No. 80:** CTR-Based Final WLAs

The draft Metals TMDL contains interim and final WLAs for Municipal (MS4), CalTrans and industrial general permittees, that are simply the CTR concentration criteria (slightly revised to account for hardness of the discharged water). As discussed below, the application of the CTR to storm water is not supportable either legally or technically, and would pose unreasonable compliance burdens.

Although the TMDL talks about the use of BMPs to achieve WLAs, it is the Regional Board's intent to apply these WLAs in the form of numeric limits, rather than relying on BMPs as authorized under federal and state policies and under federal and state NPDES permits for discharges of stormwater. Once the Metals TMDL is adopted, NPDES permit limits must be consistent with the WLAs. In fact, the Regional Board concedes as much: The Metals TMDL states that when the TMDL is adopted by OAL, it will seek to have the Municipal (MS4), CalTrans and industrial general NPDES permits modified to incorporate WLAs for each. Consequently, the CTR criteria will be applied inappropriately as not-to-be-exceeded, end-of-pipe limits.

The draft TMDL suffers from the flaws as further explained below and as discussion of "Storm Water and the California Toxics Rule" in the attached Flow Science report, *Technical Review of Revised Total Maximum Daily Load for Metals, Los Angeles River*

*and Tributaries, Published 3/28/05.* The Flow Science report was prepared to address the use of CTR by the Los Angeles Regional Board for Metals in the LA River TMDL, in a fashion similar to the Chollas Creek Metals TMDL. That report is applicable to this draft Metals TMDL for Chollas Creek.

In adopting the CTR, EPA indicated that it did not intend the newly promulgated federal water quality criteria to be applied directly to storm water through effluent limitations. Instead, EPA stated that for storm water, "compliance with water quality standards through the use of Best Management Practices (BMPs) is appropriate" consistent with its 1996 interim storm water policy; see 65 Fed. Reg. 31682, 31703 (May 18, 2000). Following EPA's conclusions, the State Board excluded storm water discharges from regulation under the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California ("State Implementation Policy" or "SIP"). See SIP at p. 1, fn. 1. The Functional Equivalent Document ("FED") for the SIP notes that:

Because of the nature of storm water discharges and the typical lack of information on which to base numeric water quality based effluent limitations, it has not been feasible for the State Board to establish numeric effluent limitations for storm water permits.

SIP FED (V-1 33). By letter dated May 1, 2001, EPA substantially approved the SIP without adversely noting or disapproving its non-applicability to storm water discharges.

The CTR Response to Comments Report (EPA, December 1999) further explains why EPA concluded that application of CTR criteria to storm water directly in the form of permit limits is infeasible. In response to comments on the costs of compliance with CTR criteria if applied as numeric effluent limits for storm water, EPA stated that this was not a valid scenario, acknowledging that wet weather discharges are technically difficult to model and evaluate financially, because they are intermittent and highly variable. Wet weather discharges also occur under more diverse hydrologic or climatic conditions than continuous discharges from industrial or municipal facilities, which are evaluated under critical low flow or drought conditions. If the EPA had enough data to completely characterize all the conditions and do the necessary modeling, WQBELs would be developed using dynamic models to account for the intermittent loadings and exposures from the storm water discharges. In the absence of this data, EPA will continue to advocate the use of BMPs, as discussed in the CTR preamble.... EPA will continue to work with the State to implement storm water permits that comply with water quality standards with an emphasis on pollution prevention and best management practices rather than costly end-of-pipe controls.

Response to Comment ID: CTR-001-007. EPA provided a detailed explanation in response to comments submitted by Larry Walker Associates (LWA), on behalf of the County of Sacramento Water Division. LWA had analyzed a number of operating scenarios in an attempt to determine whether compliance with CTR-derived effluent limitations could be achieved within the cost estimates provided by EPA. In commenting on LWA's analysis, EPA stated LWA use a limited data set ... for each of the pollutants

of concern, and use statistical projections to predict "worst case" (i.e., 95<sup>th</sup>, 99<sup>th</sup>, and 99.91<sup>th</sup> percentiles) discharge values. These predicted discharge concentrations [were] then used to assess whether instream criteria would be met. *This is an extremely conservative approach that would not be used by EPA to establish compliance with water quality-based effluent limits or water quality criteria. To assess the potential for metals and organics to exceed aquatic life and human health criteria during intermittent, high flow, storm water episodes, a complex dynamic modeling effort would be required. This procedure is highly data intensive....* The generalized technical approach for assessing compliance with the applicable criteria is described in EPA's Technical Support Document for Water Quality Based Toxics Control (March 1991). For typical point sources, this is performed by developing wasteload allocations (using steady-state models, under low flow conditions) and developing WQBELs based on these wasteload allocations. *The process of developing wasteload allocations and WQBELs that would be protective of applicable criteria during storm events is significantly more difficult, and is not described in current EPA guidance.*

Response to Comment ID: CTR-040-004 (emphases added).

The key conclusions from EPA's discussion in the CTR Response to Comments Report are as follows:

- (i) EPA believes that the use of BMPs will, in most cases, ensure that storm water discharges do not cause or contribute to exceedances of applicable water quality standards;
- (ii) The short-term nature of the exposures, the amount of dilution and other technical factors associated with storm events make direct use of instream criteria as numeric effluent limitations highly inappropriate;
- (iii) Derivation of appropriate effluent limitations would require the use of complex, data-intensive hydrodynamic models; and
- (iv) EPA has not developed a process for developing numeric WQBELs that would be protective of applicable water quality criteria during storm events.

A prior Flow Science study, *Storm Water and Best Management Practices Analysis* (attached to these comments) further documents the inappropriateness of applying CTR criteria directly as end-of-pipe, never-to-be-exceeded effluent limitations for storm water discharges. Given the inherent variability in the flows and concentrations of storm water discharges and receiving waters, developing scientifically appropriate numeric limits would require a dynamic modeling approach that should be based upon evaluation of appropriate data sets. Data requirements include discharge and receiving water concentration and flow data, collected more frequently than once per hour over the duration of a storm event and over multiple storm events. Neither data sets nor an accepted methodology appropriate for the calculation of numeric permit limits currently exists. Application of CTR criteria directly as end-of-pipe effluent limits would essentially dictate compliance with lower-than-CTR levels. Given the need to account for the high variability of storm flows, imposing a never-to-be exceeded numeric limit in a permit would be equivalent to promulgating a much lower standard than the value of the

limit, far beyond what would be necessary to protect water quality. Determining the precise level of conservatism that would result from this approach would be a difficult task requiring examination of multiple data sets.

These conclusions reinforce EPA's original intent that CTR criteria should not be imposed as numeric limits at end-of-pipe. Moreover, it is not surprising that BMPs may be unable to achieve such an unreasonable and unnecessary level of performance. Indeed, the Flow Science analysis confirmed that conventional structural BMPs are unable to reduce pollutant concentrations in storm water sufficiently to meet numeric CTR limits consistently at end-of-pipe, over the wide-ranging conditions of storm flows. Moreover, operating sophisticated treatment facilities to consistently meet CTR levels at end-of-pipe would be exceedingly difficult. In any event, it must be emphasized that the ability or inability to achieve hypothetical limits is not relevant to determining whether those limits are appropriately derived, consistent with Clean Water Act requirements, in the first instances.

**Response:** The use of CTR criteria as Numeric Targets and to derive the allocations of this TMDL Project are highly appropriate (please see response to Comment No. 65). This comment is more pertinent to the WDRs that will be adopted to incorporate the WLA or WQBELS. As the comment states, adopting non-numeric WQBELS consisting of a BMP approach may be more appropriate in this case, than numeric WQBELS.

**Comment No. 81:** Interim WLAs - For Seven Years

The draft Metals TMDLs (March 28, 2005) applies CTR criteria as "concentration-based WLAs" for municipal (MS4) and industrial storm water discharges. As discussed above, the application of the CTR to storm water is not supportable either legally or technically, and would pose unreasonable compliance burdens. Although the March 2005 draft attempts to temporarily alleviate the compliance burden through the application of interim WLAs during a 7-year period, the WLAs are none-the-less "concentration-based WLAs." Further, even though the TMDL implementation plan contemplates that dischargers will achieve the WLAs through the use of iterative BMPs, the WLAs are none-the-less end-of-pipe, never-to-be-exceeded concentration limits. Compliance is further complicated by the way the TMDL contemplates the hardness adjusted CTR WLA - The WLA above the hardness adjusted CTR number is not allowed either in the interim or final WLAs. As described below, stormwater varies significantly from storm to storm and even within storms. It would be impossible for a discharger to determine beforehand what the hardness level or the metals concentration of discharges from a particular storm will be. As discussed above this is counter to federal and state policy and permitting programs. IEA recommends that the TMDL be revised to make it consistent with federal and state stormwater policy. For industrial dischargers, this means the use of benchmarks in the EPA Storm Water Multi-Sector General Permit for Industrial Activities to trigger and implement the iterative BMP process. Further details on this iterative BMP with benchmarks approach is given below and in our Points #5 and #6 also below.

As developed by EPA, the Storm Water Multi-Sector General Permit for Industrial Activities uses benchmark levels to serve as a point of reference to determine whether storm water discharges from a given facility merit further monitoring to ensure that the facility has successfully implemented its Storm Water Pollution Prevention Plan (“SWPPP”):

Facilities with less than benchmark concentrations are considered to have little potential for water quality impacts. Benchmark concentrations are not effluent limits, and EPA has instructed NPDES-authorized States that the benchmarks should not be interpreted or adopted as such.

Report to Congress on the Phase I Storm Water Regulations, EPA Office of Water, EPA833-400-001, February 2000 ("Report to Congress"), p. 5-17, fn. 10. *See also* preamble to Final Multi-Sector General permit:

Vagaries of storm discharges and statistical concerns will necessitate operators and EPA exercising best professional judgment in interpreting the results of any monitoring. When viewed as an indicator, analytic levels *considerably above benchmark values* can serve as a flag to the operator that his SWPPP needs to be reevaluated and that pollutant loads may need to be reduced. Conversely, analytic levels below *or near* benchmarks can confirm to the operator that his SWPPP is doing its intended job.

65 Fed. Reg. 64746, 64796 (October 30, 2000) (emphasis added); *see also id. at* 64797. Moreover, the Multi-Sector General Permit even includes a waiver of ongoing benchmark monitoring for facilities that:

collected samples for all four quarters of the 2001-2002 monitoring year and the *average* concentration was below the benchmark value.

*Id.* at 64817 (emphasis added). Thus, EPA clearly does not regard benchmark levels as an appropriate basis for permit limits, or their exceedance as grounds for enforcement action. Instead, as EPA directed the NPDES authorized states, the benchmark concentrations must not be interpreted or adopted as enforceable permit limits. Accordingly, IEA urges the Regional Board to revise the Metals TMDL and Basin Plan amendments to incorporate the EPA benchmark-based permit as the mechanism to implement the WLAs. Throughout the interim period, benchmarks should remain a trigger for evaluating BMPs, as provided in the federal Multi-Sector General Permit in which these benchmark levels were originally developed.

**Response:** This TMDL assigns individual wasteload allocations (WLAs) to certain point sources subject to NPDES requirements that reflect pollutant load reductions. NPDES regulations require that the NPDES requirements for these point sources have water quality based effluent limitations (WQBELs) consistent with the assumptions and requirements of any WLA prepared by the Regional Board and approved by EPA (see 40 CFR 122.44(d)(1)(vii)(B)). WQBELs that are consistent with the WLA could include a numeric effluent limitation equal to the WLA, or a non-numeric effluent limitation based

on best management practices that evidence shows are consistent with the WLA.

The TMDL does not specify exactly how the concentration based WLA will be incorporated into specific NPDES permits. This is entirely consistent with USEPA regulations which provide in 40 C.F.R. § 122.44(d)(1)(vii)(B) that WQBELS must be consistent with the assumptions and requirements of any available WLA. The regulations do not require the WQBELS to be identical to the WLA. The regulations leaves open the possibility that the Regional Board could determine that fact-specific circumstances render something other than literal incorporation of the WLA to be consistent with the TMDL assumptions and requirements.

In the Chollas Creek Watershed, the Regional Board will revise or reissue NPDES requirements as expeditiously as practicable to incorporate WQBELs derived from the TMDL wasteload allocation. As previously stated the WQBELs could include a numeric effluent limitation equal to the WLA, or a non-numeric effluent limitation based on best management practices that that evidence shows are consistent with the WLA. Interested persons will be provided an opportunity to comment on the WQBELs being incorporated into the NPDES requirements at the time the Regional Board is considering revision or reissuance of the NPDES requirements.

**Comment No. 82:** Underground Storage Tanks Remediation and other groundwater de-watering

Although, there are currently no active de-watering or UST remediation discharges into Chollas Creek, the CTR-based WLAs will apply to such future discharges. We are also concerned with the precedence setting nature of this TMDL on other watersheds that do have these types of discharges. Discharges associated with underground storage tank ("UST") remediation efforts under individual or general NPDES permits would be required to meet the "concentration-based" (i.e., CTR-based) WLAs assigned to those discharges. This approach appears to be impractical. In certain ways, UST remediation discharges are very similar to discharges of storm water. UST remediation is designed to extract contaminated groundwater for removal of hydrocarbons and fuel constituents. The treated groundwater is then discharged under an NPDES permit. The extracted groundwater, however, contains naturally occurring metals, including those for which the Metals TMDLs allocates WLAs. These naturally occurring metals can vary significantly in concentration in the groundwater being extracted. Further, certain metals tend to desorb unpredictably out from treatment units. Based on the past monitoring of UST remediation in the region, it is highly likely that the remediation treatment discharges would not consistently meet limits based on the concentration-based WLAs as proposed in the Metals TMDLs. As the NPDES permit limits for UST remediation discharges must be consistent with the WLAs after the Metals TMDLs are adopted, it is highly likely that the remediation projects would have to design the treatment system to guarantee compliance. IEA believes that delaying remediation projects is not the appropriate implementation strategy for these TMDLs.

We urge the board to amend the TMDL to provide that groundwater de-watering and UST remediation discharges are *de minimis* and insignificant and therefore shall not be assigned an allocation. If WLA are to be included, at a minimum their implementation should include the use of monthly averages and an interim implementation schedule (again, applying the benchmark-based interim WLAs, triggering BMP evaluation, for the same interim period as for other classes of permittees), to allow remediation permittees for UST remediation projects sufficient time to adequately monitor, assess and implement appropriate treatment or other options to meet the WLA.

**Response:** Pollutant discharges from de-watering and / or UST remediation efforts will not be given exception to meeting the WLAs of this TMDL. Individual WDRs for such discharges will be made consistent with the WLAs of this TMDL to ensure that the discharges do not cause an exceedance of CTR Criteria in Chollas Creek. The San Diego Water Board has issued general WDRs for groundwater discharges to surface waters (Order Nos. R9-2000-90 and R9-2001-96). Underground storage tank remediation discharges typically do not meet the effluent limitations in the WDRs. In response, the San Diego Water Board issued WDRs for re-injection of treated groundwater from VOC cleanup sites (Order No. R9-2003-0111) to provide an alternative disposal option.

**Comment No. 83:** Dry-Weather Discharges

A variety of dry weather flows are typically allowed under stormwater permits including, for example: fire hydrant flushing; potable water sources (including potable water related to operation, maintenance, or testing of potable water systems); drinking fountain water; atmospheric condensates (including refrigeration, air conditioning, and compressor condensate); irrigation drainage; landscape watering; springs; ground water; foundation or footing drainage; and sea water infiltration discharged back into the sea water source. Although not all of these flows are relevant to IEA member facilities, fire hydrant flushing, atmospheric condensates, landscape watering, and foundation drainage flows are common. These routine discharges would have to be eliminated or treated as a result of the CTR-based WLA.

There is no basis to establish a strict WLA equal to CTR, to be achieved by entirely eliminating or treating these routine and minor dry weather discharges. The Regional Board has done no analysis to demonstrate that it is feasible to implement improved BMPs to eliminate the discharge or to treat down to CTR, of all such non-storm water flows; nor has it considered the cost of doing so as required by law. Given the negligible contribution of these sources, it would be wholly unreasonable to impose a significant cost of eliminating them. We recommend that, instead of being allocated an WLA, these *de minimis* dry weather discharges be allowed to continue without a specified allocation, in the same manner as they are now permitted under the storm water general permits.

**Response:** The IEA position that essentially nothing should be done about dry weather discharges is disheartening. The response to Comment No. 65 details why the CTR is the appropriate basis for the WLAs. Since this is a concentration-based TMDL (acceptable to the USEPA, see Comment No. 18) the WLAs apply throughout the year and during both wet and dry weather conditions. If these discharges do not significantly

contribute to the exceedance of WQOs in Chollas Creek, the dischargers may choose not to focus BMPs on these discharges.

**Comment No. 84:** Clarify Reliance on the BMP Process.

The Regional Board seems to acknowledge that the permittees are to use an iterative BMP process to meet final waste load allocations. However, the Regional Board actually contemplates the imposition of both interim and final WLAs directly as numeric effluent limits in permits. For example, the Metals TMDL states that the board will "Amend the different statewide and Regional Board orders that regulate point source discharges to Chollas Creek to require that urban runoff from MS4 achieve the WLAs set forth in section 11.3 below, prior to discharge to Chollas Creek." (Section 11.2 Implementation Action Plan Objectives #1, p 66.)

On the other hand, item #2 in section 11.2 states that the Regional Board intends to: "Establish mechanisms to track BMP implementation, monitor BMP effectiveness in achieving the WLAs, in urban runoff discharges to and from MS4s, assess success in achieving TMDL objectives and milestones, report on TMDL program effectiveness in attaining the copper, lead and zinc water quality objectives in Chollas Creek." If the Regional Board does not intend to impose interim WLAs and final WLAs directly as numeric effluent limits, but instead will rely appropriately on BMPs, that intent must be stated more clearly in the Basin Plan amendments and the TMDL. If the Regional Board does intend to impose these WLAs directly as numeric limits despite the references to BMPs, IEA strongly urges reconsideration of that decision based on our prior comments and the following points:

The NPDES regulations expressly authorize the use of BMPs in any circumstance in which "numeric effluent limitations are infeasible." 40 C.F.R. § 122.44(k)(3). As EPA emphasized when it adopted the final Storm Water Multi-Sector General Permit for Industrial Facilities (*see* 65 Fed. Reg. 64746, 64759 (October 30, 2000)), this standard for imposing BMPs was recognized in *Natural Resources Defense Council v. Costle*, 568 F.2d 1369, 1380 and n. 21 (D.D.C. 1977): "Congress did not regard numeric effluent limitations as the only permissible limitation on a discharge.... [W]hen numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels." Based on currently available information, the development of scientifically defensible numeric limits for highly variable storm water discharges remains infeasible and BMPs remain the appropriate means of controlling such discharges.

In recognition of the lack of information that would be needed to establish technically defensible numeric effluent limitations for storm water, EPA adopted an "interim permitting approach" in 1996 for water quality-based effluent limits ("WQBELs") in storm water permits (61 Fed. Reg. 43761; August 26, 1996). This approach relied upon BMPs in first round storm water permits, and expanded or better-tailored BMPs in subsequent permits, as necessary to provide for the attainment of water quality standards. While EPA noted that any "**appropriately derived**" numeric WQBELs should be included in permits where they existed, the existence of such WQBELs is clearly the



exception, not the rule. Federal and state courts have also recognized that the Clean Water Act does not mandate numeric limits in circumstances where they cannot be feasibly established. *NRDC v. Costle*, *supra*; see also *Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9th Cir. 1999); *Communities for a Better Environment v. State Water Resources Control Board*, 109 Cal. App. 4<sup>th</sup> 1089 (2003) (*CBE v. State Board*). *CBE v. State Board* held generally that water quality-based effluent limitations need not be numeric. *Defenders of Wildlife* upheld EPA's reliance on its policy of using BMPs "to provide for the attainment of water quality standards." 191 F.3d at 1166.

The question therefore turns on whether the calculation of numeric effluent limitations for storm water is a scientifically infeasible task at this time. The evidence, repeatedly considered by EPA, the State Board and other agencies, demonstrates that this is indeed the case. As noted above, EPA reached this conclusion initially in developing its interim storm water permitting approach (61 Fed. Reg. 43761; August 26, 1996). EPA's Questions and Answers Regarding Implementation of an Interim Permitting Approach for Water Quality Based Effluent Limitations in Storm Water Permits, 61 Fed. Reg. 57425 (1996) explained that numeric effluent limitations for storm water discharges, industrial or municipal, were not required in order to attain water quality standards:

EPA has interpreted the statute and regulations to allow BMPs in lieu of numeric limitations.... EPA has found that numeric limitations for storm water permits can be very difficult to develop at this time because of the existing state of knowledge about the intermittent and variable nature of these types of discharges and their effects on receiving waters...

Storm water discharges are highly variable both in terms of flow and pollutant concentrations, and the relationships between discharges and water quality can be complex... Depending on site-specific considerations, some of the water quality impacts of storm water discharges may be more related to physical effects (e.g., stream bank erosion streambed scouring, extreme temperature variations, sediment smothering), than the type and amount of pollutants present in the discharge. . . . [T]he existing methodologies for deriving numeric water quality-based effluent limitations [] were designed primarily for process wastewater discharges which occur at predictable rates with predictable pollutant loadings under low flow conditions in receiving waters. Using these methodologies, limitations are typically derived for each specific outfall to be protective of low flows in the receiving water. Because of this, permit writers have not made widespread use of the existing methodologies and models for storm water discharge permits. In addition, wet weather modeling is technically more difficult and expensive than the simple dilution models generally used in the permitting process.

Those conclusions are no less true today. EPA reiterated its determination in subsequent revisions to the NPDES regulations addressing storm water discharges (64 Fed. Reg. 68722, 68752-68753, 68788-68789 (December 8, 1999)), finding that the methodology currently available for deriving numeric effluent limits is significantly complicated by the variability of storm water, and determining that storm water pollutants are appropriately controlled by BMPs rather than numeric limits. Similarly, the EPA Environmental

Appeals Board rejected another demand for numeric limits, explaining that the derivation of numeric water quality-based effluent limits by application of the methods contained in EPA's 1991 Technical Support Document for Water Quality-based Toxics Control ("TSD") is not feasible where insufficient information is known about the magnitude, variation, and frequency of the flow rate of both the receiving waters and the storm water discharges. *In re: Government of the District of Columbia Municipal Separate Storm Sewer System, NPDES Appeal Nos. 00-14 & 01-09* (EPA Environmental Appeals Board, February 2002).<sup>4</sup>

Most important, EPA has reaffirmed the appropriateness of the BMP-based approach for storm water discharges specifically in the TMDL process, in its guidance on establishing waste load allocations for storm water discharges. *Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*, EPA Office of Water, November 22, 2002. In this guidance, EPA stated that WQBELs for NPDES-regulated storm water discharges that implement WLAs in TMDLs may be expressed in the form of BMPs. *Id.* at 2. EPA further stated that it "recognizes that the available data and information usually are not detailed enough to determine wasteload allocations for NPDES-regulated storm water discharges on an outfall-specific basis." *Id.* at 4. Thus, the Regional Board must recognize that EPA believes BMPs are the appropriate means of regulating storm water discharges, even where the receiving waters are listed as impaired under section 303(d) of the Act. Unless and until sufficient studies are done which would support the establishment of legitimate WLAs supported by adequate data - which is not the case at this time - any attempt to establish numeric WLAs implemented through numeric permit limits remains scientifically unjustified.

Accordingly, if the Regional Board's intent is to impose the interim or final WLAs set forth in the Metals TMDLs directly as enforceable numeric permit limits, it would have no valid scientific or legal basis for doing so. That is all the more true in that WLAs for individual NPDES permittees are actually calculated directly from CTR criteria. If the Regional Board does not intend to do so, it is critical that this intent be made clear in the final Basin Plan amendments and TMDLs.

Regarding industrial facilities in particular, the evidence leads to the same conclusion. Dr. Susan Paulsen of Flow Science Incorporated conducted a detailed review of storm water data from industrial facilities in Los Angeles County, compared with data from several major land use types within Los Angeles County and receiving water quality data for the Dominguez Channel. Flow Science Incorporated, *Storm Water and Best Management Practices Analysis* (February 2, 2005) (attached). The results of this

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<sup>4</sup> The 1991 Technical Support Document itself explains (at p.68):

In many cases, [Load Allocations] for nonpoint sources are difficult to assess because the information needed to describe the runoff associated with the high-flow storm events does not exist. This lack of information is due to the high variability of the events. Because of the importance of estimating the nonpoint contributions to the waterbody, site-specific models may be required to estimate nonpoint source loadings. Even then, detailed models are difficult to calibrate with accuracy without intensive monitoring studies, and simplistic correlations between loadings and rainfall can be, by their statistical nature, unreliable for estimating low-frequency events (e.g., worst 10-year storm).

analysis demonstrate that storm water sampled prior to discharge at these facilities exhibits concentrations of total and dissolved metals that are similar to concentrations in runoff from several other major land use categories, including light industrial and transportation land uses. Concentrations of metals in the storm water at these facilities were also found to be comparable to concentrations in receiving waters during storm events. Thus, runoff from these report facilities (even before BMP implementation) generally would not increase concentrations of metals in receiving waters.

In addition, Dr. Paulsen's study documents in detail the crucial fact that storm water quality and quantity vary significantly from year to year, storm to storm, and even within individual storm events. This is the case for runoff from industrial facilities and from major land use types, and within receiving waters. Rainfall amounts and runoff volumes vary significantly over even short distances within a watershed. Concentrations of metals in storm water entering on-site retention basins at the study facilities vary up to several-fold on timescales of less than an hour. Because of this inherent variability, the determination of scientifically appropriate numeric permit limits - and compliance with those limits - is a complex task, requiring more information than can be obtained in a single grab sample.<sup>5</sup> It would also be inappropriate to calculate numeric limits for one region of the state based upon a limited data set gathered in another region. Similarly, storm water characteristics would be expected to vary from one type of facility to another depending upon the distinct characteristics of individual facilities. As a result, the development of appropriate numeric limits must be based upon a dynamic modeling analysis utilizing a sufficient data set containing information on discharge flow rates and concentrations and receiving water flow rates and concentrations, taking into account geographic and facility variation. Such an analysis is simply not feasible at this time, as neither the necessary data set nor the methodology is available.

The final section of the Flow Science report considers candidate BMPs that are or could be utilized at the facilities reviewed for the study. The analysis concludes that BMPs at the study facilities are effective in reducing pollutant loads. Many of the facilities employ extensive on-site BMPs, including oil-water separators and on-site retention. Retention ponds have significantly reduced pollutant loads by limiting storm water discharges from these facilities. Several of the facilities have experienced no discharges to receiving waters in recent years. Available data, which are somewhat limited because discharges have been limited, demonstrate that concentrations of metals in storm water from these facilities at the point of discharges (i.e., after BMP implementation) are generally similar to or better than storm water quality from several major land use types within Los Angeles County and in receiving waters during storm events.

In sum, the results of the Flow Science study further demonstrate that continued reliance on BMPs remains technically justified, and that determining scientifically defensible

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<sup>5</sup> As the Flow Science report explains, a typical storm water sample is a grab sample that may be collected at any point during a storm event or period of discharge. Because of the high variability in concentrations between and within storm events, a long-term average concentration would provide a more reliable estimate of pollution concentration and loading to the receiving water.

numeric limits for storm water discharges remains infeasible, thus satisfying the legal standard for utilizing BMPs in their place. *See* 40 C.F.R. § 122.44(k)(3).

**Response:** The Technical Report does not address whether to express the WLAs in WDRs as numeric or non-numeric WQBELS. As requested, the Technical Report (section 10.2) has been revised to clarify this. When WDRs implementing NPDES Requirements are adopted for discharges in the Chollas Creek watershed, the San Diego Water Board will decide at that time whether to express the WLAs as numeric effluent limitations, or as non-numeric BMP programs. The information in this comment will be pertinent to that decision.

**Comment No. 85:** Implementation of the BMP Process

As discussed above, it seems that the Regional Board contemplates the iterative BMP process as the means to achieve the goals of the TMDL. IEA agrees that the iterative BMP process is the appropriate means of regulating storm water discharges to achieve TMDL goals. However, also as discussed above, the TMDL must be explicitly amended to recognize the EPA BMP and Benchmark approach as the mechanism to achieve the TMDL goals. Further, IEA requests that the Regional Board revise the Metals TMDLs to clarify the circumstances under which the BMP process is triggered.

First, the Regional Board must clarify what monitoring results would be considered an exceedance of the benchmark levels. As noted above, EPA considered that analytic results would have to be "considerably above benchmark levels" on average, in order to trigger re evaluation of BMPs. 65 Fed. Reg. 64746, 64796 (October 30, 2000).

It must be clear in the TMDL, how an exceedance would be determined. Benchmarks are not to be interpreted as not-to-be exceeded limits - i.e., that analytic results from a single grab sample should not be considered an exceedance -- a single grab sample does not provide an accurate indication of whether benchmark levels are actually being exceeded. Due to the high variability of storm water flows, a single sample cannot be considered representative. A grab sample may be collected at any point during a storm event or period of discharge. Given the variability in concentrations between and within storm events, a single grab sample cannot provide a reliable estimate of pollution concentration and loading to the receiving water.

Second, in order to identify and implement structural and non-structural BMPs that can "meet" the interim and final WLAs, appropriate design criteria must be specified. At many facilities structural BMPs are not appropriate and at some they are not possible. At other facilities it may be appropriate to incorporate structural BMPs that will handle a specified volume of storm water in a reasonably anticipated storm event; i.e., a "design storm." However, in order to design such structural BMPs, it will be necessary to define design criteria such that facility specific structural BMPs can be incorporated into the facility SWPPP. The Metals TMDL Basin Plan amendments must clarify that a single exceedance does not trigger BMP revisions designed to prevent any further exceedance of benchmarks, for all sizes of storm event.

IEA recommends that the Metals TMDLs be revised to clarify that EPA's standard for triggering the BMP process - i.e., monitoring results "considerably above benchmark levels" - will apply and that analytic results from a single grab sample will not be considered as exceedances. In addition, we ask that the Regional Board identify the process by which design criteria for implementing appropriate and cost-effective structural BMPs will be determined. In addition, it should be clear that storm water volumes in excess of the design criteria would be authorized to by-pass the structural BMPs without being considered in non-compliance with the WLAs.

**Response:** The Technical Report (section 10.2) has been revised and discusses the various approaches as to how the Wasteload Allocations will be incorporated into WDRs. Wasteload Allocations can be expressed in WDRs by numeric effluent limitations or by a BMP program, or both. Please see the response to Comment No. 81 regarding the use of benchmarks.

A measured concentration above the hardness-adjusted WLA will be considered an exceedance; just as a concentration in the creek itself above the hardness-adjusted CTR will also be considered as an exceedance. The IEA is correct in that a single sample does not characterize all spatial and temporal conditions. However, it cannot be assumed the creek or point discharge is actually, on average, lower than the measured concentration. There is an equal probability that the average concentration is higher than the measured concentration.

**Comment No. 86:** Allocation for Open Space

The March 2005 draft of the Metals TMDL does not contain a load allocation ("LA") for "open space," representing aerial deposition of pollutants to the ground surface that is then transported to receiving waters in storm water runoff. This category is treated as an unquantified negligible source. However, as explained in the Flow Science report, *Technical Review of Revised Total Maximum Daily Load for Metals, Los Angeles River and Tributaries, Published 3/28/05*, there are several problems with not allocating a LA to open space.

First, direct air deposition varies with storm size (daily volume), therefore the direct air deposition of metals should simply be a constant value LA for all storms. Because direct air deposition occurs at a constant rate it will constitute a larger proportion of the TMDL during lower events (which offer less dilution) and a smaller proportion of the TMDL during larger events (which offer more dilution). Therefore, the assumption that direct air deposition will represent a constant, insignificant proportion of the TMDL is incorrect.

Second, empirical evidence suggests that the estimates of open-space metals load contributions seem much underestimated. For example, Flow Science's analysis suggests that the TMDL copper allocations for open space can be a significant contributor of metals to the watershed.

Third, insofar as the combined storm water WLA is dependent on the poorly calculated direct air deposition and open space contributions, it is incorrect. In sum, the technical

deficiencies in the open space analysis result in an extremely conservative and unjustified insignificant LA, resulting in inappropriately greater WLAs to point sources.

**Response:** Please see response to Comment No. 78.

**Comment No. 87:** Inclusion of Unlisted Reaches in the TMDLs.

The drafts Metals TMDL clearly states that only the lower 1.2 miles of Chollas Creek is listed, however, the TMDL covers the entire creek, and as such includes targets and allocations for reaches that are not listed as "impaired" under Clean Water Act section 303(d), but that are upstream of listed reaches (See Problem Statement - Page 1). IEA objected to the inclusion of unlisted reaches in the TMDLs as technically unjustified and improper under the Clean Water Act. In the plain language of Clean Water Act section 303(d)(1)(C), states must establish "for the waters identified in paragraph (1)(1) of this subsection [i.e., in the 303(d) list] in accordance with the priority ranking, the total maximum daily load. . . ." There is no basis to establish TMDLs for reaches and tributaries that are not listed, regardless of the alleged contribution to downstream impairments. The Regional Board is not free to simply sweep new water bodies into TMDLs at its sole discretion. That is the function of the 303(d) listing process, with the participation of stakeholders, State Board and EPA. Moreover, the claim that the upstream reaches "cause or contribute" to exceedances in listed reaches is not scientifically supportable. As explained in the Flow Science report, *Technical Review of Revised Total Maximum Daily Load for Metals, Los Angeles River and Tributaries, Published 3/28/05*, this assertion makes no sense for those reaches that are not on the 303(d) list. The very fact that these unlisted upstream reaches were not listed means that metals concentration data collected in them indicate that they have relatively good water quality. If these reaches have fairly good water quality, in what sense are they significant contributors to poor water quality downstream? Accordingly, there is no technical or logical justification for developing TMDL allocations for unlisted reaches.

**Response:** Please see response to Comment No. 33.